

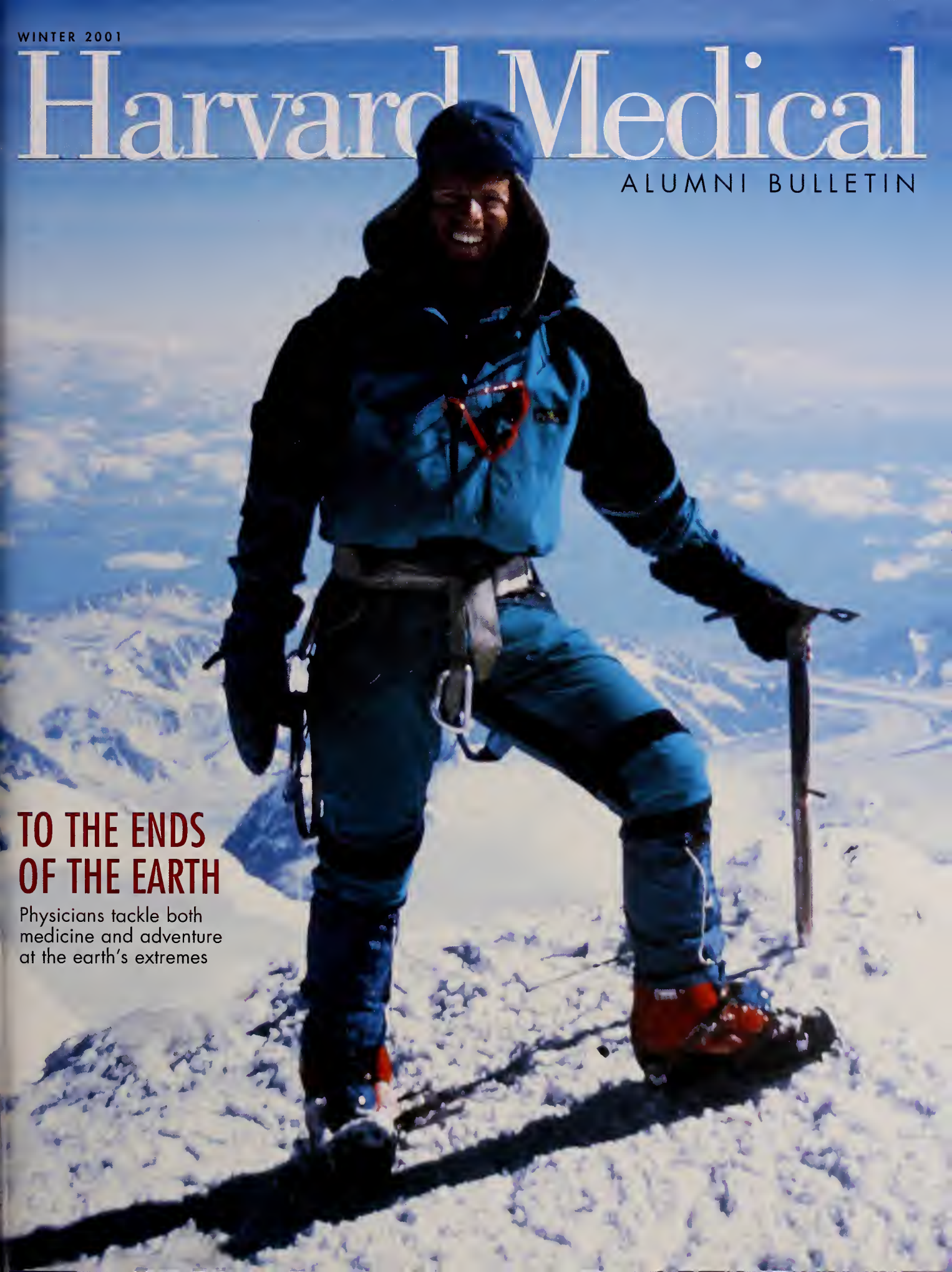
WINTER 2001

# Harvard Medical

ALUMNI BULLETIN

## TO THE ENDS OF THE EARTH

Physicians tackle both  
medicine and adventure  
at the earth's extremes





#### LEGACY

The late Richard Warren, Class of 1934, stands in the old site of the Warren Anatomical Museum, one of the many legacies left by his family of eminent surgeons, whose connections to HMS spanned more than two centuries. Treasures exhibited in the new museum site are featured on page 42.



# CONTENTS



46

## DEPARTMENTS

Letters.....	3
Pulse.....	6
HMS at the millennium; a new teaching academy	
President's Report.....	9
by Charles J. Hatem	
Bookmark.....	10
A review by Elissa Ely of <i>30 Secrets of the World's Healthiest Cuisines</i>	
Bookshelf.....	11
Benchmarks.....	12
A popular computer game demonstrates a vital link between sleeping and learning	
by Misia Landau	
Alumna Profile.....	56
Nawal Nour teaches physicians how to treat women who have been circumcised.	
by Susan Cassidy	
Class Notes.....	58
In Memoriam.....	61
Hermann Lisco	
In Memoriam.....	62
Guillermo Sanchez	
Obituaries.....	63

## SPECIAL REPORT: TO THE ENDS OF THE EARTH

### On Top of the World.....14

A physician indulges a passion for adventure and bestows the gift of sight in the Himalayas.

by BEVERLY BALLARO

### Broken Silences.....20

During his quest to prevent severe hearing loss among Inuit hunters in Greenland, a neurophysiologist gains long-overdue recognition for the co-discoverer of the North Pole.

by PAULA BYRON

### Northern Exposure.....26

Exploring the Arctic by dogsled, in Alaskan villages, and on board a Russian icebreaker, three physicians discover the enchantments of the far north.

by PAULA BYRON

### Breaking the Ice.....32

An anesthesiologist uncovers medical clues in the unlikelyst of settings—the Antarctic.

by SUSAN CASSIDY

### Cold Comfort.....36

As two HMS alumni know only too well, summitting a mountain is only half the battle; you need to be able to descend safely as well.

by BEVERLY BALLARO

### On Call in the Wild.....40

How can physicians incorporate adventure into their lives—and medicine into their adventures?

by BEVERLY BALLARO

## FEATURES

### Unburied Treasures.....42

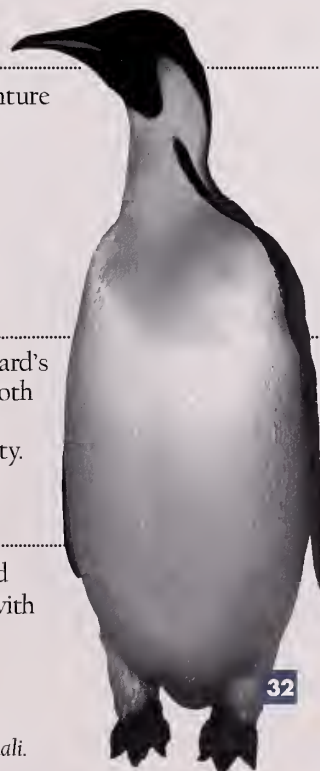
The newly displayed artifacts in Harvard's Warren Anatomical Museum reveal both the outer limits and the ingenuity of medicine on the threshold of modernity.

by VIRGINIA HUNT

### Quest for the West.....46

The Rocky Mountain West tantalized nineteenth-century American settlers with twin visions of health and wealth.

by BETTY ANNE JOHNSON



32

Cover photograph: Geoff Tabin '84 summits Denali.

## In This Issue



WHEN I WAS A LITTLE GIRL, JUST BEGINNING TO READ, I CAME ACROSS A book on the Civil War. In those pages I learned, with growing alarm, that the conflict had been waged between the North and the South. Without waiting to read more, I ran to my mother and asked who had won. When she answered, "The North," I was greatly relieved. At 330 miles above the Arctic Circle, my hometown of Barrow, Alaska—the northernmost point of the United States—had won the war.

Although my sense of American history has since improved, my passion for the far north has remained unchanged. In this issue of the *Bulletin*, we track the exploits of physicians whose passions for the ends of the earth have led to adventure. We begin with Geoff Tabin '84, a mountain-climbing, bungee-jumping ophthalmologist who has been called "a little crazy" by Sir Edmund Hillary himself. Tabin stands at the juncture of adventure and medicine; when not climbing the Himalayas, he combats the high prevalence of blindness in Himalayan villages.

Next we follow Arctic explorers: S. Allen Counter, an HMS professor who has researched severe hearing loss among the Inuit of Greenland; Norman Wilson '63, who has dogsledded with Inuit seal hunters in Canada; Georgiana Boyer '55, who has conducted clinical visits in Alaskan villages; and Edgar Miller, Jr. '54, who has traveled to the North Pole as ship's surgeon on a Russian icebreaker.

We then head 180 degrees south, to the territory of Warren Zapol, an HMS professor who has led nine expeditions to Antarctica in search of clues as to why Weddell seals can stay submerged in water more than 30 times longer than the most expert human divers. Zapol believes this incredible feat can teach physicians valuable lessons about treating the frailties of human physiology.

Finally, we report on a near-fatal mishap shared by Stephen Arnon '72 and George Merriam '75, who were forced to shelter in a mountain crevasse for a week, subsisting on candy bars, snow melted by their own body heat, and songs remembered from Harvard Glee Club days.

Not everyone welcomes extreme adventures, of course, for the often bleak and inhospitable climates at the ends of the earth can be intimidating. My mother tells a story from the 1950s, when there were no doctors at the tiny hospital in Barrow, where she and three other nurses provided all the medical care for the community. A physician from the Lower 48 was hired at last, and the nurses eagerly went to meet his incoming ship. Yet when the doctor caught sight of the treeless tundra, the ramshackle houses, and the ice boulders piled askew on the beach, he refused to disembark. After reading about the stalwarts portrayed in these pages, however, you will feel assured that the physician who was cowed by this frozen desolation was a graduate of some other medical school.

*Paula Byron*

EDITOR-IN-CHIEF  
William Ira Bennett '68

EDITOR  
Paula Brewer Byron

ASSOCIATE EDITOR  
Beverly Ballaro, PhD

ASSISTANT EDITOR  
Susan Cassidy

BOOK REVIEW EDITOR  
Elissa Ely '88

EDITORIAL BOARD  
Rafael Campo '92  
Elissa Ely '88  
Atul Gawande '94  
Robert M. Goldwyn '56  
Perri Klass '86  
Victoria McEvoy '75  
James J. O'Connell '82  
Nancy E. Oriol '79  
J. Gordon Scannell '40  
Joshua Sharfstein '96  
Eleanor Shore '55  
John D. Stoeckle '47

DESIGN DIRECTOR  
Laura McFadden

ASSOCIATION OFFICERS  
Charles J. Hatem '66, president  
Paul J. Davis '63, president-elect 1  
Mitchell T. Rabkin '55, president-elect 2  
Stephen G. Pauker '68, vice president  
Maria C. Alexander-Bridges '80, secretary  
Cecil H. Coggins '58, treasurer

COUNCILLORS  
Rafael Campo '92  
Paul Farmer '90  
B. Lachlan Forrow '83  
Michael A. LaCombe '68  
Gina T. Moreno-John '94  
DeWayne M. Pursley '82  
Nanette Kass Wenger '54  
Francis C. Wood, Jr. '54  
Kathryn A. Zufall-Larson '75

DIRECTOR OF ALUMNI RELATIONS  
Daniel D. Federman '53

ASSISTANT DEAN FOR ALUMNI  
AFFAIRS AND SPECIAL PROJECTS  
Nora N. Nercessian, PhD

REPRESENTATIVE TO THE  
HARVARD ALUMNI ASSOCIATION  
Chester d'Autremont '44

The *Harvard Medical Alumni Bulletin* is published quarterly at 25 Shattuck Street, Boston, MA 02115 © by the Harvard Medical Alumni Association.  
Phone: (617) 432-1548 • Fax: (617) 432-0013  
Email: [bulletin@hms.harvard.edu](mailto:bulletin@hms.harvard.edu)  
Third class postage paid at Boston, Massachusetts. Postmaster, send form 3579 to 25 Shattuck Street, Boston, MA 02115  
ISSN 0191-7757 • Printed in the U.S.A.





## Faith Healing

How intriguing are the various modalities of physician renewal that are displayed in the summer issue of the *Bulletin*. My professional career has been characterized by one reviewing physician as "variegated," and the process through which I have proceeded since medical school has certainly been the source of my renewal over the years. Having trained in internal medicine and pediatrics, I undertook fellowships in genetics and rheumatology. Some years later, I returned to school at the Iliff School of Theology in Denver, receiving a master's degree in religious studies, with an emphasis on biomedical ethics. During those studies, I also became intensely interested in the spiritual aspects of health care, and I integrated that into my medical practice of chronic pain management.

In my personal search for optimal health, I have incorporated nutritional information on the importance of a low-fat diet and use of vitamin and mineral supplements, studies of physical fitness that included training in the practice of tai chi, and the development of a regimen of meditation and prayer. One specific daily prayer is a modification of the so-called "Serenity Prayer,"

as follows: "Oh God, grant me the serenity and inner harmony to accept the things I cannot change; grant me the strength and courage to change the things I can; and grant me the wisdom, discernment, and humility to know the difference."

THOMAS C. WASHBURN '57  
BRADENTON, FLORIDA

## More than a Passing Glance

I thoroughly enjoyed the summer issue of the *Bulletin*. Normally, I only glance at the articles and look for classmates in the "Class Notes." (Incidentally, there are not enough of these letters; please expand this section.) However, I read the current issue from cover to cover. I particularly enjoyed the articles "Striking a Balance," "Second Wind," "When HMS Went to War," and "On the Brink." Also useful were "Bookmark" and "Bookshelf."

JOHN W. PARKER '57  
PASADENA, CALIFORNIA

## Teaching the Teacher

The quality of the *Bulletin* is better than ever. I teach medical students and I like to keep back issues as handy references. I have come to depend on the *Bulletin* for

my medical education, just as I do the *New England Journal of Medicine*.

BRY BENJAMIN '47  
NEW YORK, NEW YORK

## No Easy Answers

I devoured the summer issue of the *Bulletin* in expectation of finding the key to equanimity in the modern practice of medicine. I was disappointed. What I learned was that the physician reporters and subjects of the articles found sustenance by caring for the unfortunate, by engaging in other volunteer activities, and through developing personal hobbies or new callings. There was a unifying declaration that medicine's fundamental values include "a one-to-one relationship made possible only by the investment of time." Since my retirement, much of my volunteer caregiving has been to provide time to my friends, time needed to clarify the inadequacies and uncertainties that were the consequences of hurried patient care.

Before my retirement, the cash flow generated by my office-based partnership practice of internal medicine gradually approached my overhead costs, and my last month in practice cost me \$200 out of pocket. But I was an anachronistic physician who did not delegate any patient counseling, "consenting," or examining to subordinates or phone services. I provided a full hour for a complete history and physical examination, and debriefed during a



PHOTO: RICH FRIEDMAN

follow-up office visit. I knew my patients and they knew me. Lifeguard HMO labeled me an "expensive provider." Since my retirement, sidewalk encounters with patients have reaffirmed the values that I provided.

The stories contained in the *Bulletin* do not address the fundamental disconnect between personal care and managed care. I believe that medicine's fundamental value does include "a one-to-one relationship made possible only by the investment of time." The current contraction of financial support of a physician's time is sucking the quality from medical care. Being thorough is no longer an option. Providing full information and counseling in the selection of treatment goals for care in terminal illness has withered.

I hope a future issue of the *Bulletin* will explore the ways "physician renewal" can be applied in the context of medicine's fundamental value: "a one-to-one relationship made possible only by the investment of time."

ALAN F. CARPENTER '55  
LOS ALTOS, CALIFORNIA

## Keep 'Em Flying

Congratulations on the best issue yet! When I read the summer issue, it was

great to see my 1946 instructor, Arthur Pier '39, in his twenties—but where were his white sneakers?

I was in London a few months ago for the 60th celebration of the Battle of Britain and, as usual, I was amazed at the politeness at the RAF Club in Piccadilly. No one made the faintest reference to the 27 long, miserable months during which England was being destroyed and the United States chose not to come to its rescue.

I am reminded of the line in "America the Beautiful": "God mend thine every flaw." We were very flawed but we are doing better now.

JOHN W. KELLER '49  
(FORMER MEMBER OF THE ROYAL AIR FORCE; RECIPIENT OF THE DISTINGUISHED FLYING CROSS)  
NAHANT, MASSACHUSETTS

## A Search for Common Ground

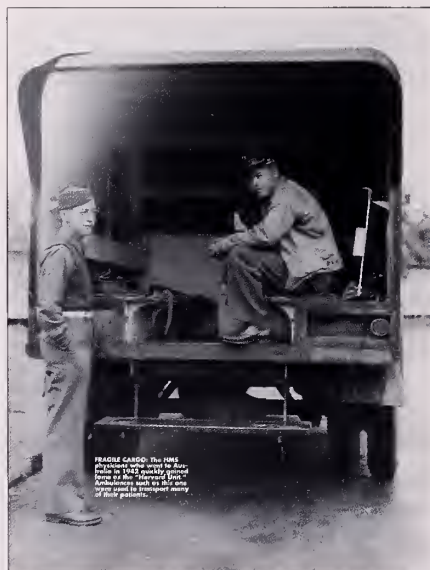
The well-written (as always) letter from William Carey '54 in your summer issue carried an intriguing double message not immediately apparent. I have never met with Dr. Carey, but we have corresponded over the years when his letters to the *New England Journal of Medicine* and *Pediatrics* caught my eye.

What I read in his letter on attention deficient hyperactivity disorder is the difference between pediatricians and child psychiatrists in their approaches to patients and their illnesses. When I was training at Children's Hospital under Bronson Crothers, he wrote about this, and he gave me the impetus to turn from my pediatric training and, much later, to become a child psychiatrist. I retained my base in the Academy of Pediatrics and was an original member of its section on growth and development, so I can speak from both sides of the issue.

But ADHD has baffled all of us, and Dr. Carey writes meaningfully about the effect that this has had on clinical practices with children. His letter illustrates well the difficulty of any two practitioners talking calmly about the relation between diagnosis and therapy with these families and their offspring. Although he wisely exhorts us to use optimism, it is also clear that the issue, first raised by Charles Bradley in 1938, suggests that we indeed "have a long way to go." Unfortunately, the pediatricians think the psychiatrists lack optimism, and the latter group think that the former's optimism is blind. Perhaps consensus is a will-o'-the-wisp when technical thinking meets inherent philosophies of caregiving.

On another subject, when you write your next installment on HMS going to war, please remember that there were many of us congregated elsewhere. The 23rd (Buffalo) General included more than a half dozen from HMS in its roster. By the time it set up in Vittel, France, it had already seen battle action in Naples (where, incidentally, an HMS Medical Society met monthly). In France it grew to 3,000 beds with a similar 1,000-bed rehab unit. We were fortunate to be in former hotels during the extremely cold winter of 1944-45, but we were flooded with patients when the Battle of the Bulge arrived. Our experiences were shared by our neighbors, the 5th and 6th General Hospitals.

HENRY H. WORK '37  
BETHESDA, MARYLAND



WHEN HMS WENT TO  
**WAR**

In WWII, a generation of Harvard doctors answered the call to duty ★

"BRILLIANT U.S. SURGEONS STAFF ARMY HOSPITAL," THUNDERED THE JULY 24, 1945, headline of Brisbane, Australia's local newspaper. "One of America's most brilliant collection of surgeons and physicians," the article gushed, "as gathered in a small northern town ready to operate in what will be one of the largest hospitals, civil or army, in the southern hemisphere. They are members of the famous Harvard unit, and each is a professor in his particular branch of medical science."

"The Harvard unit is regarded as one of the finest bodies of medical men ever to have left the United States," the article went on to state. "Many of the surgeons have carried out or consulted at operations on famous Americans, but are loathe to discuss them, shying violently when [asked] if perhaps they had treated world figures such as film stars."

—♦♦♦—  
by BEVERLY BALLARO

FRANK CARNO: "The 1945 physicians who went to Europe in 1942 to help the British Army in the Battle of the Bulge" are the same Harvard graduates who served in the Army Hospital in Vittel, France, during the Battle of the Bulge.





## IN MEMORY OF CHARLES DAVIDSON

December 7, 1910–March 15, 2000

"With your 'ho, ho' manner and thundering laugh, some passed you off as just a jovial 'good old boy' who happened to study the liver. But we knew better. We knew that your sharp glance didn't miss a thing."

—STEVEN A. SCHROEDER

### Remembering a Titan

*Following publication of a memorial to Charles Davidson in the summer issue, the Bulletin received the text of a eulogy delivered by Steven Schroeder '64 at a memorial service for Davidson at Harvard's Memorial Church on June 1, 2000. Schroeder interned on the 11 and IV (Harvard) Medical Services of Boston City Hospital from 1964 to 1966 and from 1968 to 1969. He is currently president and chief executive officer of The Robert Wood Johnson Foundation.*

It didn't have to be that way, and it puzzled a lot of people. The hospital was old and in poor repair. It smelled bad. Its civil service staff were underpaid, and many of them had lost their sense of customer service, if they ever had it to begin with. Crucial supplies were too often scarce or missing. And far too many patients were tragically self-destructive, to the despair of those who had to care for them.

Yet, despite all those obstacles, the morale among interns, residents, and fellows of the Harvard Medical Service of Boston City Hospital was the best of the best teaching hospitals, at least that is what those of us thought who were privileged to serve there.

How did this happen? What drew accomplished young doctors to this run-down hospital in a shabby part of town? What made them have such pride in

working so hard as well as such dread of letting down their peers?

It has been said that leadership is cause, and all else is effect. If that is so, then the roots of the successful Harvard medical training programs lay in the ruling triumvirate of William Castle '21, Maxwell Finland '26, and Charles Davidson. Of the three, Castle and Finland were better known nationally. Indeed, they dominated their fields of hematology and infectious diseases.

But to those of us working in the trenches of the Peabody and Medical buildings—as well as the Thorndike Laboratory—it was Charlie Davidson who set the tone. Oh, you were a sly one, Charlie! With your "ho, ho" manner and thundering laugh, some passed you off as just a jovial "good old boy" who happened to study the liver. But we knew better. We knew that your sharp glance didn't miss a thing. We noticed that you never played favorites, even though there were colleagues among us who deserved special praise. We noticed that you never stinted in demanding the very best for our patients, no matter how poor or disenfranchised they seemed. And you always insisted they be treated with dignity, whatever their circumstances.

We also grew to admire your wisdom in choosing which battles to fight, and which to avoid. There was a limit to how much you could push the city bureaucracy to

yield more resources and better services for patient care, and you must have quickly realized those constraints. Yet there seemed to be no limit to what you would do to make sure we had every opportunity to take the next steps in our young careers.

I don't think we realized how much personal care and guidance we got from you at that time, nor how much you had nurtured the spirit and soul of the residency program. It was only later, when we compared experiences with graduates of other programs, that we realized just how fortunate we had been.

So maybe that is why—a quarter century after the Harvard Medical Service was disbanded in 1973—scores of your former residents and fellows gathered with you on Cape Cod to celebrate the bonds they had forged together and to acknowledge just how much you had given them. To be sure, nostalgia had put a Camelot-like halo on what had been a gritty experience at the time. Yet, there was no denying the collective pride in what we had endured together, as well as in the subsequent accomplishments of our colleagues.

But now all three of you are gone, first Max, then Bill, and now you, Charlie. We are gathered here today in gratitude for the legacy that you left us, which will endure for the rest of our professional lives and—who knows—maybe even beyond. For you inspired us to do our best, to respect the less fortunate among us, and to trust and nurture our colleagues. No one could have given us a better start in medicine than the one you gave us. The fact that so many of us are here today—in body or in spirit—is a tribute to that legacy and testimony that we will continue to strive to deserve your pride and support.

May you rest in peace.

STEVEN A. SCHROEDER '64  
PRINCETON, NEW JERSEY

*The Bulletin welcomes letters to the editor. Please send letters by mail (Harvard Medical Alumni Bulletin, 25 Shattuck Street, Boston, Massachusetts 02115); fax (617-432-0013); or email (bulletin@hms.harvard.edu). Letters may be edited for length or clarity.*

## On the Cutting Edge

**T**HIS FALL, ALUMNI FROM THE Classes of 1931 through 2000 attended the first-ever seminar intended for all alumni. "HMS at the Millennium: What's New and What's Happening In and Around the Quadrangle" was moderated by Tenley Albright '61, chair of the Alumni Fund, and Daniel Federman '53, senior dean for alumni relations and clinical teaching. The two-day program, held on the HMS campus, aimed to update alumni on new events, institutes, departments, and medical frontiers at HMS.

The program began with a welcome by Alumni Council President Charles Hatem '66. After a message from Dean Joseph Martin, the presentations got under way with a lively talk by Judah Folkman '57, Andrus Professor of Pediatric Surgery. Folkman, who proposed the concept of angiogenic disease and reported the first angiogenesis inhibitor, has opened a field of investigation now being pursued worldwide. He discussed angiogenesis inhibitors in clinical trials for cancer in the United States and Europe.

In the next presentation, Stephen Goldfinger, faculty dean for continuing education, noted that continuing medical

education at Harvard began in the 1870s at the request of alumni. Each year, he said, the program at Harvard has approximately 40,000 enrollees, 70 percent of whom are physicians. Participants come from all 50 states and 67 foreign countries. Approximately 180 one- to five-day courses are offered each year, in addition to home study modules, conferences, and programs on topics ranging from stem cell transplants to the relationship between spirituality and healing. "The holy grail of continuing medical education is being able to measure the success of programs in terms of the health of those we care for," Goldfinger said.

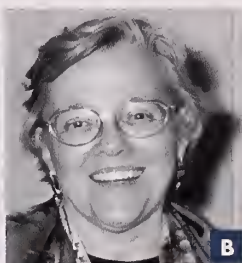
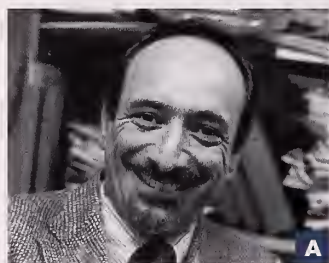
Benjamin Bierbaum, chairman of the New England Baptist Bone and Joint Institute, covered new advances in joint replacement surgery. He discussed exciting developments in basic science, gene research, biomechanics, and biomaterials that have allowed physicians to refine the art of reconstructing joints, helping patients to resume activities that enrich their lives. Bierbaum also discussed new educational tools that are assisting physicians in training a new generation of orthopedists to fulfill the needs of the elderly, whose numbers are rapidly increasing.

Philip Leder '60 then discussed how, in 20 years, the Department of Genetics at

HMS grew from three principal investigators to twenty-nine. Leder updated alumni on genetics and genomics, touching on such subjects as informatics, stem cell research, gene therapy, and mouse models of human disease. He also afforded a glimpse into the future, considering pharmacogenetics, complex genetic diseases, and developmental and behavioral genetics.

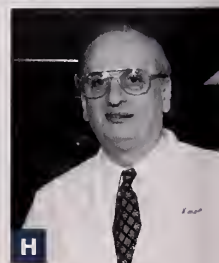
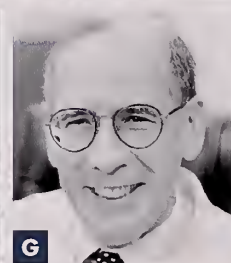
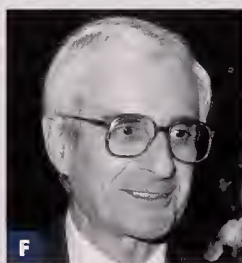
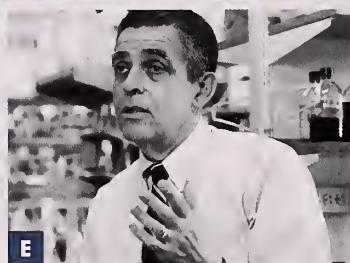
The Friday program concluded with participants—including current HMS students—gathering at Vanderbilt Hall for a reception with Nobel Laureate Joseph Murray '43. Many then went on to attend a special program that evening, "Reverence for Life: A Celebration of Service," in commemoration of the 125th anniversary of Albert Schweitzer's birth and the 250th anniversary of Johann Sebastian Bach's death. The program, organized by B. Lachlan Forrow '83, included a concert featuring the Longwood Symphony Orchestra Chamber Music Ensemble and reflections on Schweitzer's legacy and community service.

Seminar participants reconvened on Saturday morning for a panel called "Meet the Experts." The experts included Charles Hatem; Jeffrey Drazen '72, editor-in-chief of the *New England Journal of Medicine*; Dennis Kasper, executive dean for academic programs at HMS; Michael

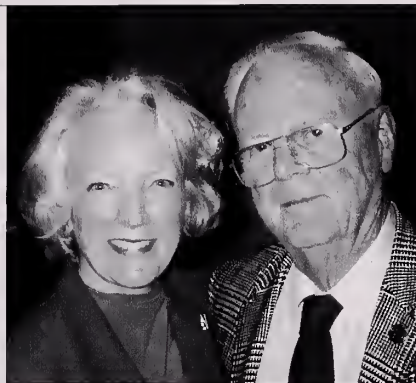


### SEMINAR LEADERS: Speakers at the alumni event included:

- A. Stephen Goldfinger
- B. Eleanor Shore '55
- C. Benjamin Bierbaum
- D. Marian Neutra
- E. Philip Leder '60
- F. Gerald Foster '51
- G. Peter Black
- H. Judah Folkman '57







**BACK TO SCHOOL:** Seminar organizer Tenley Albright '61, with participant Andy Roddenbery '42

Laposata, director of clinical laboratories at Massachusetts General Hospital; and Judith Messerle, librarian of the Countway Library of Medicine.

The Saturday program continued with a talk by Gerald Foster '51, former associate dean for admissions, who discussed HMS students of yesterday, today, and tomorrow. He presented individual profiles to show the range of backgrounds among HMS students, and compared the students of the Class of 1951, most of whom were white men, with those of the Class of 2000, 54 percent of whom were women and 44 percent of whom were people of color.

"At HMS, there is diversity not only of gender and ethnicity, but also in backgrounds, interests, and accomplishments," Foster said. "We are all enriched by the talents and diversity of our students."

Peter Black, chairman of the Department of Neurosurgery at Brigham and Women's Hospital, then gave alumni a look at an operating room of the future. He discussed his work, which emphasizes cutting-edge 3-D technology for resecting tumors. Through collaboration with the Surgical Planning Laboratory, Black helped develop the Brigham Surgical Navigator and the revolutionary intraoperative MRI. He presented slides and video footage showing how such imaging techniques are used to remove brain tumors, and discussed surgeons' ability to do brain mapping. These techniques, he said, give surgeons "MRI vision" in dealing with subtle brain abnormalities.

Eleanor Shore '55, HMS dean for faculty affairs, highlighted the accomplishments of the HMS Center of Excellence

in Women's Health, which has established a fund to confer grants for interinstitutional projects focusing on women's health issues. The center has also succeeded in having women's health designated as a tenth curricular theme in medical student education, conducted a faculty salary gender equity study, and sponsored conferences. In addition, it has supported the expansion of the 50th Anniversary Program for Scholars in Medicine, designed to assist young physicians and scientists in pursuing an academic career. Thus far the program has awarded 100 fellowships of \$25,000 each.

Shore concluded her talk by citing statistics from a Commonwealth Fund study of men's health. "Men's life expectancy at birth is still shorter than women's by six years," she noted, "which suggests that HMS may need a Center of Excellence in Men's Health as well."

Marian Neutra, professor of pediatrics and director of the GI Cell Biology Research Laboratory at Children's Hospital, gave the closing presentation, on the uptake of antigens, pathogens, and vaccines at mucosal surfaces and local immune protection. She discussed recent research, including studies in which uptake of antigens and vaccines by specialized epithelial M cells has been correlated with the resulting secretory immune responses on local mucosal surfaces. Such research, she said, promises to play an important role in the development of new strategies for preventive childhood and adult vaccines against pathogenic viruses and bacteria that colonize or invade mucosal surfaces.

Seminar organizer Tenley Albright described the event as a great success. "Top people in a number of different departments and specialties spoke about the latest advances, not just in one field, but across the whole scope of the Medical School," she noted. "It made us realize just how much medicine is evolving all the time, especially at HMS." The seminar's organizers hope that it will help create a channel for the flow of information between HMS and its alumni. ■

## THE SCHOTT LETTER

*The nation's most unique investment letter, written & edited by John Schott, M.D. HMS '66*

**"The highly regarded Schott Letter helps investors cope with emotional hang-ups that make for mistakes in the stock market."**

*Forbes, February 1996*

In 1986 Dr. Schott recommended the purchase of Berkshire Hathaway; will you be a reader when he finds the next Berkshire Hathaway?

**24% average returns for 12 years**

THE SCHOTT LETTER  
120 CENTRE STREET  
DOVER, MA 02050

\$110.00 for 12 issues  
MC/VISA

**1 (800) 797-9678**



### Carpet Diem

A Rug for Everyday & Every Mood

From Antique Orientals to Contemporary, and Everything in Between

**DECOR INTERNATIONAL**

141 Newbury Street  
Boston, MA 02116

617-262-1529 Validated Parking

**BEST OF BOSTON RECIPIENT**

## Class Act

**H**ARVARD MEDICAL SCHOOL IS creating a multi-million endowment to fund the Academy at HMS, which will support the educational activities of the School's most gifted and innovative teachers. The Academy initiative is the brainchild of Daniel Lowenstein '83, dean for medical education at HMS. The goal, he says, is to promote, model, and reward excellence in medical teaching.

Students, Academy members, non-Academy faculty, and the broader national community of medical educators all stand to benefit in different ways from the School's renewed commitment to outstanding teaching in the face of rival demands on medical faculty time and energy. In recent years, the rigorous demand for research in academia and the advent of managed care have put the medical school structure to the test;

doctors, hard-pressed to be more efficient and see more patients, have less time to devote to students. "Our goal is to correct a structural limit in medical schools that prevents the optimal support of their teaching mission," Lowenstein says.

At HMS, the new Academy is intended to enhance and support teaching above and beyond what currently exists at the School and its teaching hospitals. Initial membership will be limited to between 75 and 100 faculty of assistant professor rank or higher, and will be expanded over time. Membership will be representative of all major areas of the curriculum, and, to the greatest extent possible, of all Quadrangle departments and clinical departments at the affiliated teaching hospitals.

Entry into the Academy will serve as a reward for those faculty who demonstrate superior achievement and leadership in at least three out of five areas: teaching skills, curriculum development, course or educational program directorship, national

scholarship related to education, and mentoring. The ideal member, Lowenstein says, will possess "a passion for teaching, a willingness to commit time to teaching, and a reputation as an innovator or role model educator." Fellows will consist of students, residents, junior faculty, and others who wish to advance their skills as teachers under the mentorship of a regular member of the Academy.

The endowment is being funded by contributions from both public and private sources. Funding will support grants to faculty members as well as the establishment of "Academy-owned" endowed chairs. Individual donors will have the opportunity to support professorships named after them, and entire alumni classes may choose to create professorships named after the class itself or a beloved teacher. "The biggest effect of the Academy," Lowenstein says, "will be to support a critical mass of gifted teachers in their efforts to advance the quality of education at HMS." ■

## HEALTH CARE EAST & WEST CONFERENCE

June 24-29, 2001, Boston, USA

### HEALTH CARE MOVING INTO THE 21ST CENTURY

A unique conference for health care professionals from the U.S. and China presented by HMS, the Chinese Medical Association, Harvard Medical International, HSDM, HSPH, and MIT. The goals are to improve understanding, to examine ways of enhancing health care in both countries, and to encourage long-term cooperative ventures. There will be formal and informal dialogue on key areas of health care provision, including:

- Keeping Health Care Professionals Up-to-Date
- Traditional, Complementary, or Alternative Medicine
- Managing Trauma and Disaster
- Basic and Clinical Research and Research Training
- Determining Health Priorities and Educating the Public
- The Threat of Unhealthy Environments
- Mental Health and Substance Abuse
- Trends in Sexually Transmitted Diseases and AIDS

**REGISTER ONLINE TODAY @ <http://www.chinausahealthcare.org> OR CALL 404.233.6446**

For more information, please check the web site or contact the Conference Coordinator: Health Care, East and West MediTech Media Conferencing, Inc., 3340 Peachtree Road, Suite 550, Atlanta, GA 30326, Telephone: 404.233.6446, Facsimile: 404.233.2827, e-mail: [info@chinausahealthcare.org](mailto:info@chinausahealthcare.org)



# PRESIDENT'S REPORT



**T**HE FALL MEETING OF THE ALUMNI Council, held October 19 and 20, segued into a Harvard Medicine at the Millennium event, "What's New and What's Happening In and Around the Quadrangle." This seminar, moderated by Dan Federman '53 and Tenley Albright '61, featured a message by Dean Joseph Martin about the state of the School and presentations on subjects that ranged from computational genetics to advanced technology in neurosurgery.

At the Council's dinner, new members were introduced: Mitchell Rabkin '55, president-elect; Pete Coggins '58, treasurer; Rafael Campo '92, 2nd Pentad; Kathryn Zufall-Larson '75, 5th Pentad; and Francis Wood '54, 9th and Beyond Pentads. Reports included updates from the *Bulletin* by William Bennett '68 and Paula Byron, as well as from the Alumni Fund by Tenley Albright and Kristen White.

The subsequent full-day Council session began with a focus on two basic questions: Where did we come from, and where are we going?

As a matter of historical record—with details thanks to Nora Nercessian, assistant dean for alumni affairs and special projects, as well as author of *In Celebration of Life: A Centennial Account of the Harvard Medical Alumni Association, 1891-1991*—we acknowledged the pivotal role of James Chadwick, Class of 1871, in the establishment of the Harvard Medical Alumni Association (HMAA). His organizing energy assembled this "meeting of gentlemen" who voted unanimously to establish the HMAA. The articles of the HMAA Constitution, quickly ratified, spoke clearly of the Association's goals: "to advance the cause of medical education, to promote the interests and increase the usefulness of the Harvard Medical School, and to promote acquaintance and good fellowship among the members of the Association."

We are advantaged by standing on Chadwick's shoulders, buttressed by the example of his commitment to HMS and reminded of his leadership in defining the mission of the HMAA. Oliver Wen-

dell Holmes called Chadwick "the untiring, imperturbable, tenacious, irrepressible, all-subduing agitator, who gave no sleep to his eyes, no slumber to his eyelids, until he had gained his ends, who neither rested nor let others rest until the success of his project was assured," all the time maintaining the temperament of "a poet and artist"—a rather modest example for us to follow!

On the matter of future directions, the Council returned to an ongoing discussion about surveying the alumni. Given the impediments associated with any lengthy survey instrument, Council members agreed that the Internet ought to be pursued as a central means of obtaining basic information and soliciting alumni opinion (with supplemental written inquiries for those not electronically connected). Plans are accordingly under way for our first email survey venture.

The Council also continued its discussion of holding one meeting a year outside Boston. Last year's meeting, which had an excellent program yet a modest attendance, suggested that future away programs should be designed to attract larger numbers of local alumni.

Jules Dienstag, faculty associate dean for admissions, then presented the current demographics of U.S. medical school aspirants. There remains a sustained interest among highly capable students in applying to HMS.

Lastly, Dan Lowenstein '83, dean for medical education, offered his vision of establishing an academy at HMS designed to recognize and support committed teaching faculty in their roles as teachers, mentors, and developers of innovative approaches in medical education.

As always, your views about the work of the Council are most welcome. Easy contact can be made with Dan Federman, Nora Nercessian, or me through the alumni office (617-432-1560) or by email: [hmsalum@hms.harvard.edu](mailto:hmsalum@hms.harvard.edu). ■

*Charles J. Hatem '66 is director of medical education at Mount Auburn Hospital in Cambridge, Massachusetts.*



## PARIS Left Bank

We offer rental of our spacious, well-appointed 17th century apartment home. The period decor includes all modern conveniences. The location is the finest in Paris, on the Rue de Varenne, 7th Arrondissement. Maid service and our *Guide to the Best of Paris* are included for free.



## ST. BARTS Caribbean

We offer rental of our wonderful home on the ideal tropical island. Our spacious property has a private pool and is carefully tended, perfect for honeymoons and relaxing vacations. Maid service and our *Guide to the Best of St. Barts* are included free of charge.

**(650) 327-2415**

PLEASE CALL FOR FURTHER PARTICULARS.  
IT WILL BE A PLEASURE TO ASSIST YOU.



## ADVERTISE HERE

*The Harvard Medical  
Alumni Bulletin  
invites you to place  
an ad in these pages*

*Call today to place  
your ad*

**617-432-2550**

## 30 Secrets of the World's Healthiest Cuisines

by Steven Jonas '62 and Sandra Gordon  
(John Wiley & Sons, 2000)

**N**UTRITION COURSES AT HARVARD MEDICAL SCHOOL used to be strictly elective. Most of us couldn't be bothered. We were studying the medicine of nuclear war or the art of psychiatric filmmaking. Nutrition was about confusing, interchangeable B-vitamin derivatives, and maybe something about starch. It wasn't about health.

Personally, this attitude carried me a long way through training. The only pleasure of internship was a full-length white coat with pockets big enough for ophthalmoscope, EKG calipers, tuning fork, red-top tubes, purple-top tubes, and fistfuls of candy bars from the all-welcoming, all-wise ladies in the gift shop. Half-length student coats had less room for pockets, which created a terrible space dilemma. Medical instruments were necessary for treatment, but candy bars were necessary for life.

Those unenlightened days are dead. Now nutrition is as important as anatomy, and it is pathophysiology. In *30 Secrets of the World's Healthiest Cuisines*, Steven Jonas '62 and Sandra Gordon remind us upfront that a third of all North American cancer deaths are diet-related, and that our food directly affects our arteries, islet cells, and endangered bones. The "secret" in the title—to spill it from the start—is a "global diet" that isolates and imports the healthiest eating habits from other countries. The writers have assembled these parts into a kind of benign nutritional Frankenstein, using this country's red wine, that one's vegetarianism, and plenty of soy for binding.

Certainly, it is a useful idea. If each country has its own food pyramid, why not create a multicultural polygon? The book provides the details. A traditional Mediterranean diet, for instance, is monounsaturated, with extra-virgin olive oil full of vitamin E, and herbs full of antioxidants. (Legend has it, the authors write, that Greeks drank a cupful of oil each day before heading into the fields. This is not a cuisine suggestion.) China is plant-full and dairy-free (although rates of osteoporosis are lower than in North America). The French paradoxes are famous—paté and low coronary artery disease, thanks to wine that increases high-density lipoprotein production; cigarettes and lower cancer rates, thanks to polyph-

nols that block carcinogen formation. In Japan, there is, in a word, fish. And, in another word, soy. Fish and soy offer omega-3 fatty acids and estrogen-esque isoflavones, which help Japan enjoy the highest life expectancy rates in the world. Scandinavia is high-fiber. West Africa is fiery, full of spices that release endorphins. The dietary pyramid of the future comes from such building blocks.

Of course, these are the ethnically ideal ways of eating. Poor American habits—the intern's diet—have infiltrated international cuisine like an oil slick. In today's urban Greece, 50 percent of calories are from partially hydrogenated fats. In Hong Kong, heart disease and strokes are rising in direct proportion to the quantity of Western restaurants. The enemy is us.

*30 Secrets of the World's Healthiest Cuisines* promises not only 30 secrets (keeping count is actually a little confusing) but associated wisdoms as well. The epidemiologic data is mostly familiar, but some of the particulars will stop you dead with interest: a couple of paragraphs on how sumo wrestlers get so

fat; a description of the 100-pound yams that grow in Gambia; a guide to ordering different teas in a Chinese restaurant (rub one finger under your nose for jasmine, cup your hands into petals for chrysanthemum, and tug your right earlobe for black)—useful signs for the busy reader with an empty pot.

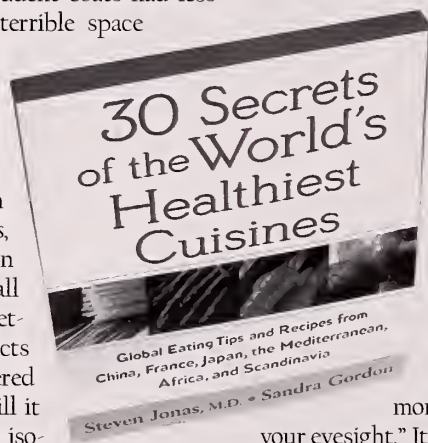
Throughout the book, there are "notes from Dr. Jonas." These are highlighted sidebars meant to enlighten and interest, although, unfortunately, not a single sumo wrestler crouches anywhere nearby. Little here is new: "Work in a workout." "Get more calcium." "Watch out for MSG." "Protect your eyesight." It is as if someone in a white coat periodically enters from stage left, delivers an authoritative monologue, then exits under bright lights until the next scene.

Any book about food should get to the heart of the matter, and so this one ends with 90 pages of recipes to leaf through. Slightly edited, unusual, and with best wishes from Italy, here is one of them:

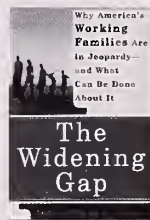
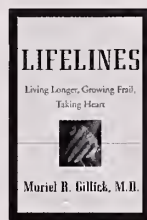
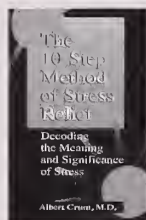
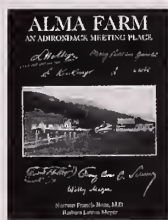
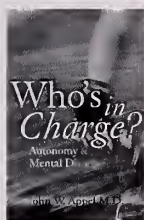
### Sorbetto di Limone e Basilico (Lemon and Basil Sorbet)

Scrub and peel eight lemons and two oranges. Place peels in saucepan and add 2-1/2 cups water and 1-3/4 cups sugar. Bring to boil and boil rapidly for three to four minutes to reduce amount of liquid. Cool and strain into a bowl. Squeeze fruit, strain, and add juice to the syrup. Tear 24 basil leaves into small pieces and add. Chill overnight. Pour into an ice cream maker and churn for 10 to 15 minutes until sorbet is firm enough to serve. ■

Elissa Ely '88 is a lecturer on psychiatry at HMS.







## Who's in Charge?

*Autonomy and Mental Disorder*, by John W. Appel '36 (Rutledge Books, Inc., 2000)

The ability to establish and maintain independence is a critical component of mental health. This book presents three case studies that illustrate how a lack of identity becomes an impediment to leading a productive life. It includes an examination of childhood conditions that result in the highly dependent adult, as well as innovative modes of treatment that have been successful in restoring troubled patients to meaningful lives.

## Alma Farm

*An Adirondack Meeting Place*, by Norman Francis Boas '45 and Barbara Linton Meyer (Boas & Meyer, Publishers, 1999)

The authors tell the story of the Alma Farm, created in the late nineteenth century in Bolton, New York, in the foothills of the Adirondack Mountains. The farm became a meeting place for a group of visitors that included German and American physicians of the time, whose families and descendants established a unique relationship with the community and each other that continues to the present.

## The 10-Step Method of Stress Relief

*Decoding the Meaning and Significance of Stress*, by Albert Crum '57 (CRC Press, 2000)

This book instructs readers on effective ways to find the causes of stress, learn its meaning, and interpret its messages and significance. The author emphasizes the

importance of increasing—rather than decreasing—perception in relieving stress, and discusses special aids such as emotional literacy, natural relaxation, and the stress accuracy test, which can help readers increase perception.

## Lifelines

*Living Longer, Growing Frail, Taking Heart*, by Muriel R. Gillick '78 (W.W. Norton & Company, 2001)

People in the developed world are living longer now than ever before, but as life expectancy increases, can we look forward to enjoying those extra years? The author examines the period referred to as "frailty," when the body begins to slow down and multiple health problems can make daily functioning difficult. Focusing on the stories of four cases drawn from her clinical experience, the author highlights the challenges that arise when frailty develops and sheds light on how people find comfort, well-being, and meaning in the last months or years of life.

## The Widening Gap

*Why America's Working Families Are in Jeopardy—and What Can Be Done About It*, by Jody Heymann '88 (Basic Books, 2000)

In examining the lives of working families in the United States, Heymann reaches a disturbing conclusion: there is a widening gap between the demands of the workplace and the well-being of American families. Who cares for our nation's children when decent, affordable child care is not widely available? What

happens when the elderly get sick and need care at unanticipated times? Heymann addresses these questions by combining personal stories of the struggles of individual families with the first systematic national research on how family obligations affect working Americans.

## The Washington Trap

by G. Turner Howard, Jr. '37 (Vantage Press, 2000)

Howard's novel tells the story of Congressman Tom Ogden, a Tennessee native who brings his patriotic and conservative values to Washington and gradually earns the respect of his colleagues. Along the way, Ogden has many adventures: he faces danger while investigating drug cartels in South America and finds romance in northern Italy.

## Marriage in Motion

*The Natural Ebb and Flow of Lasting Relationships*, by Richard S. Schwartz '74 and Jacqueline Olds (Perseus Publishing, 2000)

Harvard psychiatrists who are married to each other, the authors demonstrate how to read the natural rhythms of long-term relationships and navigate high and low points over the course of a marriage. They describe what a lasting relationship looks like over time and how it differs from some of our most deeply held beliefs about love. The book also explains how to develop a "distance alarm" that signals when a relationship may be in danger and shows readers how to foster a renewed sense of excitement through shared experience.

## Doctor's Orders: Dream a Little Dream for Me

A TEAM OF HMS SCIENTISTS HAS achieved what researchers since Freud's day thought nearly impossible: a way to control—at least in part—the content of a person's dreams. The investigators are using their dream-provoking method to explore age-old questions such as: Where do dreams come from? What do they mean? What is their role in memory, learning, and creativity? What is their link to the unconscious?

For years, scientists have been stymied in their quest to understand these associations because dreams are unique events that cannot be replicated. Yet HMS researchers reported in the October 13 issue of *Science* that they were able to get 17 different people to see the same dream images as they drifted off to sleep.

"Here we have a case where with high reliability we can get people to have predictable dreams," says Robert Stickgold, the study's lead author and an HMS assistant professor of psychiatry at the Massachusetts Mental Health Center.

He and his colleagues elicited the carbon-copy images using the computer game Tetris. Over the course of three days, they trained 27 subjects—12 novices, 10 experts, and 5 amnesics—to play the game, which involves assembling geometric puzzle pieces. The researchers then monitored the subjects' dreams as they were drifting to sleep on the first two evenings.

### Team Dream

Seventeen of the subjects—more than 60 percent—reported dreaming at least once

in the hour after they fell asleep. All reported the same dream images—falling Tetris pieces. Intriguingly, the majority of dream reports occurred on the second rather than the first night of training.

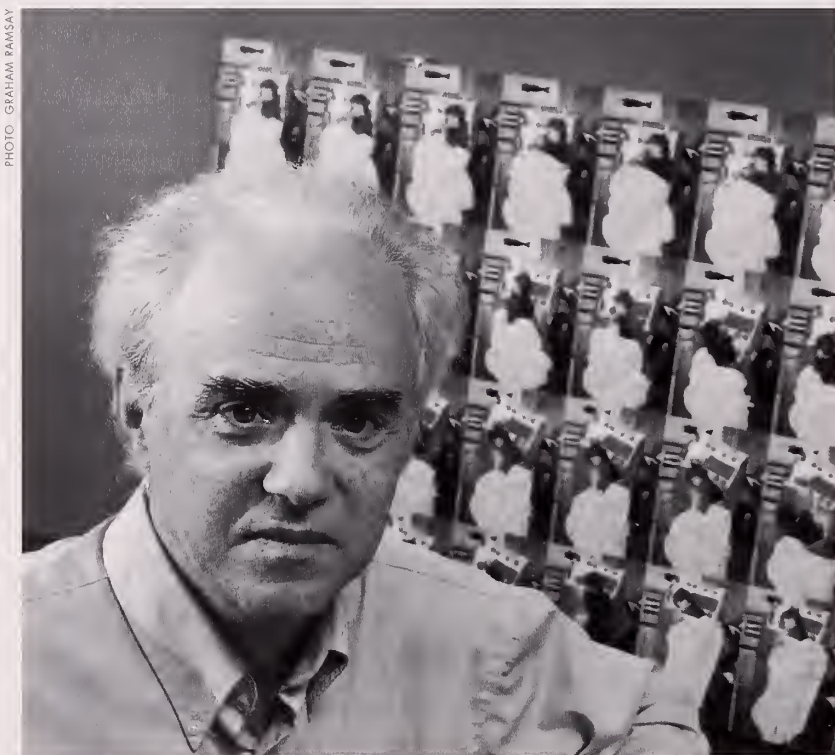
This lag between the initial training and the most intensive dreaming is interesting for the light it may shed on the link between dreams and learning. It appears that the need to learn may actually prod the brain to dream. "It's as if the brain needs more time or more play before it decides, 'Okay, this is something that I need to deal with at sleep onset,'" Stickgold says.

This notion—that dreaming is prompted by a need to learn—is supported by other findings. The researchers found that novices who reported dreaming about falling Tetris pieces did not perform as well in their initial two-hour Tetris training session as those who did not see the images. "It's as if the more work you have to do, the more likely you are to get the imagery," says Stickgold.

Those who needed to do the least work were the experts in the study, each of whom had previously logged at least 50—and sometimes as many as 500—hours of Tetris playing, mostly on Nintendo sets. Half of them reported dreams of Tetris pieces falling before their eyes, but the last two experts reported an intriguing twist. Rather than seeing the Tetris pieces in black and white as they appeared in the experimental protocol, they saw them as they appeared in their earlier Nintendo Tetris-playing days—in color and accompanied by music.

This substitution of old images for new ones strikes at the most distinctive quality of dreams—their often astounding creativity. In dreaming, the brain does not merely replay memories, but transforms them by associating them with old images and memories.

In this regard, the findings could help bolster one of Freud's main propositions, that dreams have meaning—that they represent the brain's attempt to make sense of what happens by associating new events with those in the past. "But the experts' dreams have got none of the trappings, none of the freight that goes



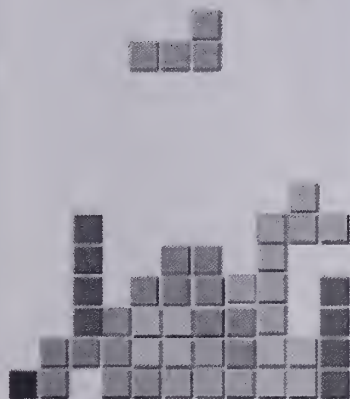
**IN YOUR DREAMS:** "I look at sleep in order to understand the waking mind," says Robert Stickgold. "You have to look at other states of consciousness to understand the one that we take for granted."

PHOTO: GRAHAM RAMSAY



## THE SLEEP PUZZLE

Subjects in Robert Stickgold's study dreamt about falling puzzle pieces after playing the computer game Tetris.



along with the concept of a Freudian dream," Stickgold says. "These are not about wish fulfillment, things they're not willing to face up to in their waking lives. This isn't about their mothers, God forbid. They're about this stupid computer game. The brain is using those same algorithms that Freud probably correctly saw—which is, take recent events and look for associated memories, strongly associated in this case, and replay them."

### Unconscious Memories

Perhaps the most surprising findings of all came from the amnesics in the study. Co-author David Roddenberry, an undergraduate at Harvard University, found that when the five amnesics—who had no short-term memory due to hippocampal damage—were exposed to the computer game protocol, three of them experienced the same dreams as normal subjects.

"I was just stunned when David called me and said they're getting the same dreams," Stickgold says. Although amnesics were known to dream, their dreams were thought to have little to do with the day's events, since those events are not remembered. Stickgold

had assumed that this would be especially true of the early, or "hypnagogic," stages of dreaming explored in their studies. Compared to later stages of dreaming, such as those occurring during deep sleep or REM sleep, hypnagogic dreams were thought to be more tightly linked to conscious, or episodic, memory. "We thought if there's one part of sleep that depends on episodic memories, which amnesics lack, it's sleep onset," he says.

The fact that some of the amnesics saw the falling Tetris pieces points to the powerful role played by the unconscious in dreams. In fact, Stickgold believes that the amnesics' unconscious Tetris memo-

ries may have affected not only their dreams but also their waking behavior. Unlike the normal subjects in their study—who improved in their Tetris playing over the course of the three days—the amnesics showed marginal improvement. Most had to be taught the game all over again each day. But Roddenberry observed that at the start of a session, one of the amnesics placed her fingers on the exact three keys used in playing Tetris.

"She did not quite know what she was doing and yet she *did* know what she was doing," says Stickgold. "In a way, this is Freud's unconscious—things activated in our brain that are, in fact, memories that guide our behavior but are not conscious."

"What we're really looking at here is the age-old mind-body problem: the mind-brain connection," Stickgold says. "We think of our mind as being ours. But there are real ways in which the brain has a set of rules of its own. We're getting an idea of what the brain uses as its rules for picking out cortical memory traces to reactivate and bring into our conscious mind, and we're trying to see across wake-sleep cycles how that process happens." ■

Misia Landau is senior science writer for Focus.

## New Reason to Sleep On It



When students cut back on sleep to finish their homework, it could be a self-defeating strategy. In another study led by Robert Stickgold, HMS researchers have found that people who stay up all night after learning and practicing a new task show little improvement in their performance. And the study suggests

that no amount of sleep on the following two nights can make up for the toll taken by the initial all-nighter. The study, published in the December issue of *Nature Neuroscience*, adds a critical piece to a growing body of work by Stickgold and others showing that sleep is necessary for learning.

To determine whether the night of sleep actually caused the improvement, Stickgold trained 24 subjects in the same visual discrimination task. Half of the subjects went to sleep that night while the other half were kept awake until the second night of the study. Both groups were allowed to sleep on the second and third nights. On the fourth day, both groups were tested on the visual discrimination task. Those who slept the first night identified the correct answers much more rapidly than they had the first day. The other group showed no improvement, despite the two nights of catch-up sleep.

"We think that getting that first night's sleep starts the process of memory consolidation," Stickgold says. "It seems that memories normally wash out of the brain unless some process nails them down. My suspicion is that sleep is one of those things that does the nailing down."

# W



# On top of the

“To have a great adventure,  
and survive, requires good  
judgment. Good judgment  
comes from experience.  
Experience, of course,  
is the result of poor  
judgment.”

—GEOFF TABIN



# RILD

A PHYSICIAN INDULGES A PASSION FOR ADVENTURE  
AND BESTOWS THE GIFT OF SIGHT IN THE HIMALAYAS



**STAR TREKKER:** Geoff Tabin (above)  
on Mount Everest's summit. Tabin (left),  
climbing the East Face of Everest.

*by* BEVERLY BALLARO

FOR GEOFF TABIN '85, THE QUEST FOR great adventure—and sound judgment—has been one long and wild ride. At the age of 44, he has packed more risk, daring, and accomplishment into his résumé than most people experience in a lifespan. An ophthalmic surgeon, professional

mountain guide, expedition doctor, family man, writer, and elite rock climber, he has been described by none other than Sir Edmund Hillary as “both incredibly determined and a little crazy.”

commanding myself, 'One slip and you are dead—concentrate!'"

Tabin was the fourth person in the world to climb the highest peaks on all seven continents, including Mount Everest in Asia and Mount Vinson in Antarctica (at 16,863 feet and 78 degrees south, arguably the coldest and remotest place on earth). He has pioneered new routes on Mount Kenya and trekked through the dense jungles of Irian Jaya, New Guinea, to scale the summit of Carstensz Pyramid, a 2,000-foot sheer rock wall that represents the highest point between the Andes and the Himalayas. He has spent time hunting and gathering with the Mbuti Pygmies in the Ituri Forest in northeastern Zaire, and befriending the cannibalistic Dani tribespeople in Irian Jaya. On a dare, he helped invent the sport of bungee jumping.

These endeavors represent Tabin's recreation. For work, he cures blind people. In 1995, Tabin helped establish the Himalayan Cataract Project with the ambition of eliminating preventable blindness in the Himalayan regions. Given his extraordinary determination, the mission seems daunting but not impossible. He is, after all, a man accustomed to taking big risks and beating formidable odds.

### Siren Song

Tabin's thirst for adventure was born not atop a mountain but between the covers of a book. His chance encounter, as a Yale freshman, with the Yale library's famous collection of mountaineering literature, which includes such classics as *True Mountain Disaster Stories*, quickly led to a fanatical four-hour-a-day reading habit, and a lifelong obsession with rock climbing. He climbed every day of his Yale career, including weekend forays to tackle icy peaks in New Hampshire, and summer pilgrimages to do short, hard, technical

climbs in the American West. Tabin's passion grew from his conviction that rock climbing represents the ultimate athletic and psychological challenge, one that he exuberantly describes as "a combination of chess, vertical ballet, and gymnastics."

Tabin's hunt—and opportunity—for adventure expanded when he deferred admission to HMS upon winning a Marshall scholarship to study philosophy at Oxford for two years. He and his climbing partner learned how to tap into trust funds left over as quaint relics from the days when, as Tabin puts it, "it was considered the sacred duty of Oxford gentlemen to go out and civilize the world." He adds, laughing, "It didn't take us long to figure out that the more exotic the locale we proposed, the more funding we got." After climbing many of the classic routes in the Alps, he went in search of increasingly big mountains in ever remoter locations around the globe.

Tabin drew encouragement and inspiration for his exploits from a peculiar circle of friends who dubbed themselves the Oxford Dangerous Sports Club. "They never attempted anything even remotely sane," he recalls fondly. "Their idea of fun was to go visit an erupting volcano to try magma surfing in homemade asbestos suits. They participated in the famous running of the bulls in Spain by fleeing through the streets not on foot but on skateboards. Their most ambitious plan involved parachuting into a lion enclosure, with each man carrying nothing but a revolver containing one bullet. Somehow, they never managed to bring that attempt off."

When one of the Dangerous Sportsmen learned of Tabin's plan to pass through the jungles of New Guinea on the way to a climb, he urged Tabin to try his hand at vine jumping, a rite of

passage for indigenous tribal boys of the region. Upon his return, Tabin helped engineer, with the use of stolen aircraft carrier docking cords, the first-ever Western bungee jump off the highest suspension bridge in England. Shortly afterward Tabin himself took the dizzying plunge from the world's highest suspension bridge in Colorado. "Back in 1979," he says, "there was a popular television show called 'That's Incredible,' which featured different people doing crazy stunts. The opening promo showed a white-tuxedo-clad man attached to a giant rubber band leading off a bridge—that was me."

### Where Earth Meets Sky

Although he arrived at HMS in the autumn of 1980 with the intention of concentrating exclusively on his goal of becoming a physician, Tabin's continuing passion for rock climbing nearly cost him his medical career—and his life. Just six weeks into his first semester at HMS, Tabin experienced a climbing accident on an outcrop just outside of Boston that sent him hurtling 15 feet headfirst into the ground, broke his arm, knocked him unconscious, and stopped his breathing. An HMS classmate, Hansell Stedman '83, saved his life by performing mouth-to-nose resuscitation and carrying him to a highway to flag down help. Tabin remained in a coma for 36 hours and struggled with memory and concentration problems after his recovery. Yet, by his second semester, he had resumed rock climbing on weekends.

That same spring, Tabin received a thrilling invitation. He was asked to join an expedition that would be making a historic attempt to explore and ascend the massive East Face of Mount Everest, a task most climbing experts considered impossible and even suicidal.



**A WALK IN THE CLOUDS:**  
Geoff Tabin participated  
in the first successful  
expedition up the East  
Face of Everest, which  
had once been consid-  
ered unclimbable.





## friends die, it brings out a powerful element of denial

To complicate the decision, the HMS dean for students refused to grant him a leave of absence. He went anyway. "Here was this incredible opportunity and I had to ask myself, honestly, if I would always regret turning it down, despite the consequences," he explains. "The answer was clear."

Although he did not reach the summit, Tabin played a key role in the success of the East Face expedition, a triumph made even more extraordinary because it was pulled off with a minimum of supplemental oxygen and no native porters. When he returned from Tibet, Tabin learned that he had been kicked out of HMS. He had to reapply and was reaccepted with the understanding that he would not disappear again. So, when he was invited, in 1983, to join another Mount Everest expedition, he despaired of getting a leave from medical school. Luckily, a professor of eye surgery approached him with a proposal to do a research project on the physiology of high altitude.

To prepare himself for the rigors of the expedition, Tabin immediately embarked on a strenuous training program that involved climbing rock and ice every weekend and turning each day of medical school into a conditioning circuit. "I used to run the five miles from my Cambridge apartment to HMS daily," he recalls. "When I got there, I would traverse the wall at the Longwood T-stop and then do pull-ups in Vanderbilt. After the run home, I would sprint the steps at Harvard Stadium. In the spring, I easily completed the Boston Marathon and felt ready for the challenge ahead."

When he arrived at the summit of Mount Everest, despite the 70-mile-per-hour winds and sub-zero temperature, Tabin savored the 15 minutes he spent alone atop what he describes as "the six-foot-by-three-foot platform of

ice that is the top of the world." At 29,028 feet, Mount Everest can be unforgiving; ascending her icy slopes by moonlight, Tabin says, "I kept commanding myself, 'One slip and you are dead—concentrate!'" To commemorate his moment at the summit, Tabin brought out a pink plastic lawn flamingo with an American flag tied around its neck, and left behind photos of his family and girlfriend.

### Bigger Isn't Better

Everest remains the only mountain that Tabin has chosen to climb simply because of its sheer altitude. "I have always valued quality over size," he says. "I think it's a shame when people approach mountains simply wanting to get to the top rather than to have the experience of really climbing. Some of my best climbs have been on little-known peaks and rock outcrops. Maximizing my efforts during each moment, rather than reaching the top, is always my goal."

"I think it's just crazy that people are guided up mountains," he adds. "Even if they stand on the summit, I don't think that following fixed ropes with mechanical ascenders from the base to the summit while breathing large amounts of bottled oxygen and having everything carried for them is actually climbing the mountain. An equivalent would be talking a layperson through performing a surgical operation and then having that person, after having tied a few knots, proclaim, 'Yeah, I went to medical school.' Frankly, if they are truly in search of a good adventure, such people would be better off skipping Everest and taking on the risks of climbing Mount Washington in winter."

Risk, Tabin explains, is "an unfortunate but essential ingredient that happens to come along with figuring out

how to do things." From this perspective, he sees many parallels between medicine and rock climbing. Scaling tall mountains and performing surgery, he explains, both require a great deal of time and preparation and do not lead to instant gratification. Both involve elements of risk and surprise. Both demand absolute, total focus and Zen-like concentration. And both lead, inevitably, to the need to make and execute decisions of larger-than-life importance. "Just this morning, for example," Tabin notes, "I was doing a cataract operation and a part of the patient's eye tissue tore. I had to stop, think, and immediately come up with an alternative approach, the outcome of which would determine whether this man would end up blind or able to see."

### Close Ties and Close Calls

Now married to a fellow ophthalmologist and father to two and stepfather to three, Tabin seeks to reconcile—and sometimes combine—the lure of the mountains with the tug of domestic responsibilities. His family is currently hosting a young Sherpa boy in their home. His 13-year-old daughter is an avid climber, and the whole family enjoys the use of the indoor rock gym that adorns their house.

Tabin remains as enthusiastic as ever about his sport and continues to indulge his passion for difficult climbs. Although he dislikes being separated from his children for long periods of time, he still spends about two months of every year in the mountains of Asia working on the Himalayan Cataract Project. Yet, he says, "I would never even consider attempting another ascent of Mount Everest. Although I still go out and run a couple of marathons every year, I'm simply not at the level of fitness that it would require. At this point in



Your first reaction is, well, I wouldn't have done it that way."

my life, it's crucial for me to maintain a certain margin of safety."

Tabin has, after all, experienced more than his fair share of close calls over the years. He once plummeted 80 feet off a mountain in Colorado and ended up dangling upside down, his head suspended a discomfiting three feet above a solid rock ledge. In Nepal, he endured 72 hours of nonstop climbing above 20,000 feet, after he had gone for 24 hours without water and nearly three days without food; only the luck of a full moon and perfect weather permitted him to survive. Retreating down Everest on his 1983 expedition, while hauling enormous loads of gear and garbage off the mountain, Tabin slipped and ended up submerged in the snow, unable to breathe or move, when his heavy pack flipped him upside down. His life was saved that day by a close friend and fellow climber. Some years later, this friend died, along with his wife, in a long tumble from an icy mountain.

Tabin is philosophical on the topic of death. He has seen many of his friends perish in avalanches, storms, falls, and other adventuring mishaps, and calculates that, but for the grace of God, he's come close to dying himself on half a dozen occasions. His book, *Blind Corners: Adventures on Seven Continents*, swarms with the ghosts of dead friends with whom he once shared exotic adventures and whose memories he vibrantly resurrects. "When friends die, it brings out a powerful element of denial," he says. "Your first reaction is, well, I wouldn't have done it that way, and so I wouldn't have succumbed to that same fate."

Witnessing so much death, however, has also enlightened Tabin by enabling him to celebrate life from a perspective not readily available to those who have not taken his risks and survived his losses. "I'm rarely riled by the little things in life," Tabin says with a laugh.

"I have what many people have described as a truly mellow personality. And I believe that this is because my experiences—especially my losses—have taught me what is impossible and what is not, what is important and

what is not. Most of all, they have taught me to really appreciate the gift of being alive." ■

Beverly Ballaro is associate editor of the Harvard Medical Alumni Bulletin.

## SPOT BLIND

Geoff Tobin is the co-founder of the University of Vermont Himalayan Cataract Project ([www.cureblindness.org](http://www.cureblindness.org)), a low-budget, all-volunteer program whose goal is to eliminate preventable and treatable blindness in the Himalayan regions. Whether due to a genetic predilection, the intense ultraviolet sunlight, the standard diet, or other factors, this region has one of the highest rates of curable blindness in the world.

Cataracts are the leading cause of blindness worldwide. In Nepal, cataracts and failed cataract surgery cause more than 70 percent of the cases of blindness, and half of all Tibetans are blind from treatable cataracts by age 70, with many people blind by age 40. There is a huge backlog of people requiring cataract surgery.

Most of the other causes of blindness in this area are also either treatable or preventable. Corneal disease from vitamin A deficiency, trachoma, and other infections are the primary blinding diseases for children. The difficult mountain terrain and lack of social services exacerbate the situation.

Project goals include: disseminating cataract surgical skills; improving the skills of doctors now practicing ophthalmology in the Himalayan regions; helping the physicians the project trains to become self-sustaining through cost recovery; performing high-volume cataract camps in regions where no care is available and the population does not warrant training a doctor; and training fully qualified ophthalmologists and subspecialists to be future teachers for the region.

The project welcomes the help of Western ophthalmologists. There is a minimum one-month teaching commitment in addition to at least a week of clinical surgery per season.

For more information, contact: Geoff Tobin, University of Vermont Medical School, 1 South Prospect Street, Burlington, VT 05401; phone: 802-847-3843; fax: 802-847-1481; email: [cureblindness@whitespider.net](mailto:cureblindness@whitespider.net).



**A SIGHT FOR SORE EYES:**  
After cataract surgery, a Tibetan woman sees her baby for the first time.

PHOTO: HIMALAYAN CATARACT PROJECT

# Broken

PHOTO: COURTESY OF S. ALLEN COUNTER

**HEARING AID:** In northern Greenland, neurophysiologist S. Allen Counter tests the hearing of Avataq Henson, a grandson of Matthew Henson, co-discoverer of the North Pole.







## DURING HIS QUEST TO PREVENT SEVERE HEARING LOSS AMONG INUIT HUNTERS IN GREENLAND, A NEUROPHYSIOLOGIST GAINS LONG-OVERDUE RECOGNITION FOR THE CO-DISCOVERER OF THE NORTH POLE

THE INUIT HUNTER CROUCHES BY A HOLE IN THE ICE. Hidden behind a white sailcloth blind attached to his rifle, he maintains a silent vigil. He can hear ice calving off a glacier in the distance; nearby, an Arctic tern caws. Finally, after an hour of concentrated waiting, he hears a telltale bubbling of the water. Despite the loss of precious seconds, he fumbles beneath his anorak for small foam cones, which he pops into his ears before aiming his rifle and shooting the unsuspecting seal.

In those few seconds, the hunter risks losing the seal rather than his own hearing, for he knows that if he doesn't, soon he won't be able to hear the water bubbling, or even his own child speaking. That knowledge—and the foam cones—came from S. Allen Counter, an HMS professor who has linked prevalent hearing loss among Inuit men in Greenland with the explosive noise from their guns. "These rifles deliver a terrific blast," Counter says, "because they must be powerful enough to bring down a polar bear."

*by* PAULA BYRON

# I WOULD

turn the audiometer up to 70 or 80 decibels for them to pick up

Counter first became interested in the Arctic when he read reports about high rates of deafness among the Inuit of Canada. He traveled to northern Greenland, where, he says, "the Inuit have suffered some of the worst hearing losses in the world." In his search for the culprit, he was able to rule out both chronic ear infections and noise from snowmobiles, which the Danish government has outlawed in northwest Greenland, where the Inuit still travel by dogsled. That left hunting rifles.

"I would go out on the ice with the hunters," Counter says, "and I couldn't believe how severe their impairment was. My testing showed that they were losing their hearing one gunshot at a time. The boys begin to have problems at the age of ten, because that's when

they start to hunt. Within five years, their loss matches that of sixty-year-olds in the United States."

The hunters experience irreversible sensorineural hearing loss, in which the sensory mechanisms that communicate with nerve fibers to deliver sounds to the brain are damaged. In such cases, Counter says, hearing aids offer little help, because the gunshots destroy the hunters' ability to perceive sounds at higher frequencies, where most consonants register.

"I would turn the audiometer up to 70 or 80 decibels for them to pick up what people with normal hearing can detect at 10 or even 5 decibels," Counter says. "It's very frustrating for them. They can hear you speaking, but they can't understand your words."

Counter also found that while young Inuit women tend to have little impairment, the older women often experience some loss at the higher frequencies. Although they're not the ones firing the guns, they too are exposed to the noise of the gunshot blasts when they accompany their husbands on hunting trips in order to butcher the seals.

When Counter returned home, he appealed to an American company that sold ear protection devices. The company donated a supply of specialized earplugs, which Counter distributed on his next visit to northern Greenland. "Many of the Inuit hunters now wear them," he says, "but compliance is still complicated, because they don't want the seals to get away while they're fumbling for earplugs."



PHOTOS: COURTESY OF S. ALLEN COUNTER



what people with normal hearing can detect at 10 or even 5 decibels.”



**IN COLD PURSUIT:**  
A. Ussarkaq Henson, grandson of Arctic explorer Matthew Henson, hurls his harpoon at a narwhal. B. Ajako Henson, another grandson of Matthew Henson, leads his sled dogs through the tiny community of Moriussaq, Greenland, on the way to the hunting grounds. C. Ole Peary, great-grandson of Arctic explorer Robert Peary, uses a white sailcloth blind while seal hunting.

# National Geographic Society declined to give the medal to

## Silent Partner

Alerting Inuit hunters to auditory risks has not been Counter's only achievement during his forays to Greenland. He has also helped explorer Matthew Henson gain belated recognition for the role he played in discovering the North Pole—a role, Counter says, that was overlooked because Henson was black.

"Henson was among the most successful Arctic explorers of all time," Counter says, "yet he has remained relatively unknown in his own country. His achievements were overshadowed by those of his white companion, Peary."

Despite an old controversy sparked by Frederick Cook's claim to have reached the top of the world first, Robert Peary has been largely credited with the discovery of the North Pole. For more than 20 years, Henson was Peary's most loyal and trusted traveling companion. As a U.S. Navy messenger—one of the highest ranks a black man could achieve at the time—Henson accompanied Peary on numerous Arctic expeditions, including the historic one to the North Pole.

On April 6, 1909, Henson, Peary, and four Inuit men reached the Pole. Peary had chosen Henson over his five white assistants to accompany him on the final run, saying he could not make it without him. "During their previous 18 years together in the Arctic, Henson and Peary had risked life and limb together in more than 10,000 miles of exploration," Counter says. "Throughout their voyages, Henson had been invaluable to Peary, as dogsled driver, mechanic, navigator, translator, and friend."

Peary was not the only one to admire Henson's prowess in the Arctic. The Inuit, who called Henson "Mahri-Pahluk," or "Matthew, the Kind One," admired his ability to speak their language, drive dogsleds, hunt walrus,

and skin seals. They also believed that the Inuit who accompanied Henson and Peary to the Pole would not have undertaken such a dangerous mission had it not been for Henson.

When the two explorers returned to the United States, the press lionized Peary; the role of his "colored servant" was accorded footnote status. Disparities in the treatment of the two men continued to the end of their lives. Peary was buried with full honors under an impressive monument at Arlington National Cemetery, while Henson was laid to rest in a simple grave in a Bronx cemetery.

## In from the Cold

In 1986, the year of his first visit to Greenland, Counter petitioned President Ronald Reagan for permission to transfer Henson's remains to Arlington National

Cemetery. In October 1987, his request was granted. The following spring, on the 79th anniversary of the North Pole discovery, Henson and his wife, Lucy, were reinterred in Arlington National Cemetery with full military honors and a stately monument adjacent to the one erected for Peary. In attendance at the ceremony were several of Henson's Inuit descendants, whose presence was another result of Counter's unflagging efforts.

On his initial trip to northern Greenland, Counter had inquired about something that had long intrigued him: a rumor that members of the North Pole expedition had fathered children there. During his first week in the Arctic, he was surprised to meet Anaukaq Henson, the 80-year-old son of Matthew Henson. Weeks later, he met Kali Peary, the 80-year-old son of Robert Peary. "I learned that Anaukaq and Kali had both dreamt



PHOTO: ROBERT E. PEARY, COURTESY OF THE NATIONAL GEOGRAPHIC SOCIETY

A



# Henson, asking for the name of the most appropriate white man."

of meeting their American relatives and of seeing their fathers' graves," Counter says.

In 1987, Counter brought both men, along with 12 members of their families, to the United States. During their two-week visit, dubbed the "North Pole Family Reunion," each son met his American relatives for the first time and laid a wreath at his father's grave. "I'll probably never do anything more memorable in my life than bringing those relatives together," Counter says. The following year, he arranged for some of the Greenlandic Hensons to attend the reinterment ceremony.

Counter's devotion to Henson's memory is still bearing fruit. This winter, the National Geographic Society at last bestowed upon Henson its most prestigious honor—the Hubbard Medal. The society had awarded Peary its first Hubbard Medal, for Arctic exploration, in

1906, and a Special Medal of Honor for the discovery of the North Pole in 1909. That same year, the society awarded the Hubbard Medal to Robert Bartlett, a white member of Peary's expedition party who had not even reached the North Pole.

"Peary admitted that Henson was the only other American member of the expedition to make it to the Pole," Counter says, "but the society declined to give the medal to Henson, asking for the name of the most appropriate white man." On November 28, 2000, the society posthumously presented the Hubbard Medal to Henson for his contributions to Arctic exploration and the discovery of the North Pole.

## Arctic Dreams

Counter remains in touch with the Inuit descendants of both northern

explorers. A thousand miles above the Arctic Circle, these descendants live as subsistence hunters in the world's northernmost communities. "The Arctic is simply a fantasy land," Counter says. "You can actually see icebergs forming when the glaciers calve, and it's exciting to be on the water with whales swimming alongside your boat."

"What you notice most about the Arctic is how pristine it is," Counter adds. "It's a vast expanse of blue sky and an unending white desert of snow and ice. You want to run out onto that ice field forever; in fact, I once gave in to that impulse, until I realized that I was running on the Arctic Ocean!"

Whenever he visits, Counter says, his Inuit friends are protective of him, because so many dangers lurk that far north. "On one of my visits," he says, "I was leaning against a dogsled trying to keep quiet, because a hunter was aiming at a seal. When the dogs tethered to the sled heard the shot, though, they bolted toward the hunter, because their first instinct is *food*. I fell backward into a crevasse and had to be rescued."

Counter returns to northern Greenland as often as he can. "Now that many of the hunters are using hearing protection devices," he says, "I like to monitor any changes of status in their hearing." He is also hoping to help combat trichinosis, which the Inuit contract at alarming rates when they eat raw polar bear meat.

"My experiences in Greenland have taught me the value of bringing a sense of humanity to medical research," Counter says. "After all, our ultimate aim is to better understand each other and to improve the quality of life for the human family, whether black, white, or Eskimo." ■

*Paula Byron is editor of the Harvard Medical Alumni Bulletin.*



PHOTO: COURTESY OF ALLEN COUNTER



**CHILDREN OF THE NORTH:** A. Both Matthew Henson (pictured) and Robert Peary fathered sons during their Arctic expeditions. B. From left: Kali, Peary's son; S. Allen Counter; Anaukaq, Henson's son; and Talilan-quaq, Peary's grandson. C. The Hubbard Medal.

# NORT





# HERN exposure

EXPLORING THE ARCTIC BY DOGSLED,  
IN ALASKAN VILLAGES, AND ON  
BOARD A RUSSIAN ICEBREAKER,  
THREE PHYSICIANS DISCOVER THE  
ENCHANTMENTS OF THE FAR NORTH

*by* PAULA BYRON

## Norman Wilson '63



get out onto Arctic ice, it's almost otherworldly," he says. "You see nothing on the horizon but more ice, either flat or in mounds that are crystal clear, with a beautiful bluish tint, almost sapphire. The shadows are sharp and distinct.

WHEN NORMAN WILSON LEARNED ABOUT ESKIMOS AS A FIFTH grader, he thought, "These people are a world away, living in their igloos. No one could ever visit them." Nearly five decades later, he encountered that world, when he ventured to Baffin Bay with a physician friend in 1995.

Wilson's odyssey began with a flight to Pangnirtung, a small Inuit community on Baffin Island, near the Arctic Circle. Since World War II, when the government relocated them from their traditional villages, the Inuit at Pangnirtung have lived in a settlement of small metal houses. Today, many supplement subsistence hunting with a monthly welfare check. Yet Wilson's first sight of the community did not create nearly as strong an impression on him as did the displacement of his sense of time. In May, under the midnight sun, he was startled by the sounds of children playing outside at three in the morning.

Wilson quickly found himself overwhelmed by the stark beauty of the surrounding landscape. "When you

And the sun circles around you on the horizon, except for one brief period, when it dips slightly below view."

The physicians spent ten days on a seal hunting expedition led by an elderly Inuit, who was attuned to traditional ways and spoke no English, and his son, who spoke both Inuktitut and English. In gratitude for a gift of huskies—transported from the opposite end of the world, the Antarctic—the father and son had extended an invitation to the donors and some of their friends to join them on the expedition. During the day, as the Inuit caught and butchered seals, Wilson and the other guests rode along on the dogsleds. They would often hop off and help push the sleds in places where the snow was too deep or a hummock of ice too high.

"Those dogs just love to pull the sleds," Wilson says. "They wag their tails and try to wriggle into their harnesses. Sometimes their ropes get tangled, and they snarl and snap at each other. But otherwise they're quite good-natured." Other Arctic animals, however, failed to endear themselves to Wilson; he declined an opportunity to observe polar bears at close range. "We did spot a mother with a cub about a quarter mile away," he says, "which was about as near as we wanted to get."



A

**THE FROZEN NORTH:**  
A. Norman Wilson helps his Inuit hosts prepare sleds for a seal hunting trip in Baffin Bay. B. The dogs love to pull the sleds. C. A member of the seal hunting expedition and one of the dogs provide a good sense of scale for an iceberg towering in the background.



B



C



The hunting party spent a week living in the Inuit family's hunting shack on the edge of the ocean ice, ten miles from town. The shack was primitive, Wilson says—simply a two-room wood cabin warmed by propane gas. To avoid overcrowding, Wilson opted to sleep in one of the family's nearby igloos for a few nights. It was larger than he had expected, and he could even stand up in it.

"Light came through the ice and heated the igloo," he says, "so it was quite cozy." But, he adds, "If I had to get up in the middle of the night, I was in for an adventure. I would bundle up and try to sneak out onto the ice, but I would still wake the sled dogs, who were always on the alert for polar bears. As they howled, I would look up at the moon, which was crisp and beautiful, even with the sun at the horizon. But I wouldn't linger—it was so cold, I'd skedaddle back to the igloo."

In the Arctic, Wilson discovered, beauty and danger go hand in hand. "One of the risks is that, every once in a while, a piece of pack ice will break off and float away," he says. "Any unfortunate souls caught on the breakaway piece may starve to death as they drift aimlessly in the ocean. Our hosts had lost a family member that way about 15 years earlier."

The Arctic adventure has been just one of many for Wilson. As a psychiatrist with a private practice in Washington, DC, he says, "I sit and talk to people all day, so I like to be physically active during my time off." He has climbed Mount Kilimanjaro, scuba dived in Belize, trekked in Nepal, and studied high-altitude medicine in the Andes. But the Arctic, he says, offered him "a cultural experience that was unique and wonderful—everything I had imagined as a boy." ■

## Georgiana Boyer '55



Boyer adopted her nomadic lifestyle after retiring from a research career in virology and immunology to raise five children. "When my youngest was ten, I realized it was time to get back to work," she says.

ON HER FIRST TRIP TO THE ARCTIC, GEORGIANA BOYER BECAME coated with mud. For several days, she and one of her daughters lived in a tent at a fishing camp outside the small Inupiat village of Kotzebue, Alaska. "It was summertime," she says, "and when the rains came, the mud just covered us. It was not exactly Manhattan—and it appealed to us very much."

Boyer's housing in Alaska improved only marginally over the next decade, when she undertook a collaborative arthritis research project among Alaskan Natives. As she traveled from village to village, she was often put up in local clinics. "I stayed in some wonderful, hysterical places," she says. "In one clinic, my research partner slept in a body carrier. I was worried about falling off the examining table in the middle of the night, so I slept on the floor, using padding from the EKG as a mattress."

In another tiny community, local entrepreneurs decided to rent out rooms in a small, dilapidated house whose windows were covered with trash bags. Each room came with either a lightbulb or a mattress. Boyer, whose room featured a naked lightbulb, snuck in a mattress, since she did not relish the idea of sleeping on the bare floor. Just as she was triumphantly settling down for the night, she realized that the room partitions were flimsy at best, and she was subjected to every nuance of her neighbor's snoring.

"So, while wearing granny glasses, I undertook a residency in preventive medicine."

From 1984 to 1988, Boyer conducted rheumatic disease surveys among the Inupiat and Yupik of northern and western Alaska, the Athabascans in the state's interior, and the Tlingit and Haida in southeastern Alaska. Then, when the National Institutes of Health, the Indian Health Service, and the Institute of Rheumatology in Moscow joined forces to study arthritis among native peoples of the Arctic, Boyer was invited to participate. From 1990 to 1996, she conducted clinical and epidemiological studies in Alaska while a Russian group conducted corresponding studies among the Yupik and Chukchi in Siberia.

Project staff were studying spondyloarthropathy, a type of arthritis that occurs more frequently in people with B-27, an HLA antigen common among Arctic peoples. The detailed birth-to-death records of the Alaska Native Health Service provided an unusual source of information about the course of the disease. Among other findings, Boyer and her fellow researchers discovered that many of the people with spondyloarthropathy had gone undiagnosed, because their often mild cases did not fit the classic descriptions of the disease.

For the six years of the study, Boyer commuted between Alaska and her home in Arizona. "We tended to make our clinical visits during the winter," she says. "During the summer, people were out hunting and fishing, but

**CIRCLING THE ARCTIC:**  
**A.** Georgiana Boyer visits Point Lay, a small Inupiat village on the northern slope of Alaska.  
**B.** Boyer stands beside a sign for the Utkeagvik Presbyterian Church in Barrow, Alaska. The sign is fashioned from the scapula of a bowhead whale.



in the winter, they often had nothing else to do, and they viewed coming to our clinics as a kind of outing.”

Boyer found that such work was not for everyone. “I discovered two strong reactions to Alaska among the other health workers visiting from the Lower 48,” she says. “Members of one camp were eager to escape, while people in the other camp fell in love with it right away. There seemed to be no middle ground.”

Alaska’s rugged terrain and extreme temperatures appealed to Boyer. “I grew up in the intense heat of Arizona,” she says, “and I found a lot of similarities between the two states. Both are wide, wild, unspoiled places. The original people who inhabited both areas had to be tough and wily. And I didn’t mind the cold and the dark, because it was cozy inside, where everyone was hunkered down.

“The Arctic peoples are amazing,” she adds. “In the Lower 48, we have so much support. And while we think we need a certain amount in terms of amenities, they have been enduring harsh conditions for thousands of years.”

Residents of Barrow, the northernmost community of Alaska, would ask Boyer, “Is it cold enough for you?” and then laugh uproariously. One summer day, while boarding a plane to Barrow, she overheard one native saying to another, “Fairbanks is so hot—it even got up to 70 above!” “Only in Alaska,” she laughs, “would they think to differentiate ‘70 above’ from ‘70 below!’”

One April day, while in Barrow, Boyer attended an Inupiat festival celebrating the start of the spring whaling season. “We watched a wonderful parade,” she says. “The water truck passed by, followed by a dump truck, then road equipment. The drivers threw candy to the children, and it skittered across the ice.”

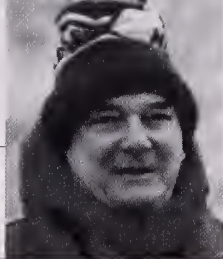
In another village, just north of the Arctic Circle, a health aide teaching an apprentice how to give injections espied the visiting doctor and politely asked if they could practice on her bottom. “I sure thought I was giving my all for medicine!” Boyer says.

Although she has enjoyed her trips to the Arctic tremendously, Boyer has taken a break from research after losing one of her sons in a climbing accident just over a year ago. She now volunteers on archeological sites near Tucson. “Mine isn’t the usual retirement,” she says. “There I am, out in the boondocks, shoveling through dirt, in search of ancient treasures.”

Boyer does plan to return to Alaska, which she misses greatly. “Nothing I’ve done professionally has matched that experience,” she says. “Alaska is so wild, beautiful, and unspoiled. As I’d fly over some remote, breathtaking Arctic scene, I’d think, ‘They’re paying me to do this!’” ■



## Edgar Miller, Jr. '54



"WHEN THE LORD MADE THE EARTH, HE PUNCHED HIS THUMB through the top, then out through the bottom," says retired surgeon Edgar Miller, Jr. "So the North Pole is submerged thousands of feet below water, while the South Pole rises thousands of feet above."

Miller, who has visited both extremes, prefers the north, even though he finds the south more beautiful. "The North Pole isn't as pretty as its southern counterpart, because it's just pack ice and ridges," he says. "The farther north you go, the more desolate it is, with ice just crammed up on itself. Yet there's something about the Arctic that I find captivating. It may be because people have lived up there for thousands of years. I've always found it fascinating, how the Eskimos have survived and even thrived in those harsh conditions."

For several weeks in 1992, Miller served as ship's surgeon on an expedition to the North Pole on the *Sovetskiy Soyuz*, a nuclear-powered Russian icebreaker. Through a fellow member of the Explorers Club, he had learned that a tour company in Connecticut was chartering the icebreaker and staffing it primarily with Russians. For four days each way, the ship would be beyond radio contact, so a doctor was needed. Miller signed up.

One of a handful of nuclear icebreakers that the Soviets operated during the Cold War, the *Sovetskiy Soyuz* can break through ice up to 15 feet thick. On Miller's trip to the Arctic, the ship carried two helicopters to fly reconnaissance, as well as onboard forecasters to help the captain plot the best course through the ice. The ship had multiple decks, with the tourists staying on the upper levels. "It was a free trip for me," Miller says, "so I was housed with the staff below, where all that grinding through the ice was deafening. It sounded like the ice was coming up through my bunk."

The icebreaker stopped at a few Inuit villages in eastern Siberia. When it passed Wrangel Island, host to the world's highest concentration of polar bears, Miller sighted about two dozen of them. "They'd smell our food and come right up to the ship," he says. "We also saw a tremendous number of birds, and hundreds of walrus. The wildlife was just spectacular."

When the ship reached the North Pole, everyone disembarked onto the ice, where they held an American-style barbecue. The Russians took advantage of the path the ship had broken, by going in for a dip, equipped with just inner tubes and vodka. Their swim lasted less than five minutes. "Some of the tourists jumped in as well, but they seemed to get out faster than they went in," Miller says. "As their doctor, I insisted that they have a rope tied around them."

**ICE CAPADES:** Edgar Miller's trip to the North Pole on a Russian icebreaker was filled with the remarkable sight of Arctic wildlife and the deafening sound of ice being crushed.

Miller's appetite for the Arctic was whetted at Dartmouth, where he spent his undergraduate days and the first two years of medical school. He had always enjoyed reading about Arctic exploration, and during his freshman year he met Vilhjalmur Stefansson.

The famous polar explorer gave a lecture on physiology, extolling the virtues of an Arctic subsistence diet, which he had adopted while living with the Inuit in northern Canada.

Miller was hooked. While still in college, he worked for two summers on a schooner in the waters near Newfoundland and Labrador, on behalf of an Arctic research institute. There, he says, "I got a feel for the subarctic. I treated Eskimos and saw icebergs, but it was still only the subarctic."

After graduating from HMS and undertaking a surgical residency, Miller served in the Navy, which sent him to the Antarctic, where he spent a year helping to build the U.S. base at McMurdo Sound. For the next four decades, until his retirement two years ago, he worked as a general surgeon in a solo practice in Wilmington, Delaware, where he had grown up. But he had also grown up with parents who, as physicians and missionaries, had started a hospital in Kathmandu in the 1950s. With such role models, Miller had developed a craving for adventure. So every year or two, he would take a month's leave from his Wilmington practice to teach medicine or conduct surgery in a developing country.

Miller followed his trip to the Arctic with one to the Antarctic the same year, also as ship's surgeon. Despite a wonderful voyage, he maintains his loyalty to the Arctic. "I'm convinced that tourists visit the Antarctic," he says, "while true explorers venture north." ■

*Paula Byron is editor of the Harvard Medical Alumni Bulletin.*



PHOTO: COURTESY OF QUARK EXPEDITIONS



# ICE Breaking the

AN ANESTHESIOLOGIST UNCOVERS MEDICAL CLUES IN THE  
UNLIKELIEST OF SETTINGS—THE ANTARCTIC

NOT-SO-FAIR-  
WEATHER FRIENDS:  
Warren Zapol and a  
flock of emperor  
penguins on the ice  
at McMurdo Sound.





by SUSAN CASSIDY

WALK INTO WARREN ZAPOL'S OFFICE AT MASSACHUSETTS GENERAL HOSPITAL and you immediately recognize signs that a polar scientist is in residence. Framed photographs on the wall show research teams bundled up in red parkas; in one photo, Zapol and a flock of emperor penguins cavort on the sea ice; delicate drawings depict Antarctic creatures. Zapol has led nine expeditions to the South Pole, and although his "day job" as head of the Department of Anaesthesia and Critical Care at MGH, and Reginald Jenney Professor of Anaesthesia





# the laboratory, the seal doesn't know how long it will

at HMS, precludes such travel for the time being, Zapol has maintained a deep connection to the Antarctic, which he calls "the most beautiful place in the world."

On his first trip to Antarctica, in 1974, Zapol's research centered on measuring the blood pH of fish. But he quickly shifted his attention to one of the South Pole's warm-blooded creatures, the Weddell seal, which has the amazing ability to dive deeper than 500 meters and stay underwater for more than 90 minutes. "They'd probably do a thousand meters," Zapol says, "only they'd hit the bottom." He points out that while a human who can swim unaided to a depth of 20 meters and stay submerged for three minutes is considered an expert diver, that ability pales in comparison to the behavior of this seal, which has developed adaptations that allow it to withstand the intense pressure of deep-sea diving, not to mention the lack of air and the extreme cold.

Zapol adds that one of the greatest dreams in medicine is to find a way to shut down the metabolism when the body cannot supply oxygen and eliminate waste products, particularly during acute heart attacks and strokes. "If you knew how to shut down the metabolism, much as the seal can," he says, "you could preserve the brain and the heart from injury."

## Diving Virtuosos

During a dive, the seal must provide its tissues with oxygen, limit buildup of carbon dioxide in the blood, and avoid various ills of extreme pressure, such as nitrogen narcosis—what divers call "rapture of the deep." And if the nitrogen tension in blood and tissues becomes too great as the seal swims to the surface, the result can be "the bends," a condition that may lead to blocked blood vessels in the brain and spinal cord, paralysis, and even death.

So how do Weddell seals overcome these obstacles? Laboratory studies have

provided some important clues. The seals store twice as much oxygen per kilogram of body weight as humans, and they concentrate it mainly in the blood. Human divers depend on their lungs for oxygen storage; seals do not. Another adaptation is bradycardia, or slowing of the heart rate. Further, some of the seal's tissues stop functioning during a dive; others switch to anaerobic metabolism.

Yet to fully understand the adaptations that allow Weddell seals to penetrate to such incredible depths and stay submerged so long, field studies are required. "Forcing a seal confined in a laboratory to put its face underwater does not necessarily evoke the same response as a dive undertaken freely in the sea," Zapol says. So, on six occasions, he and his team headed to the National Science Foundation's research station on the shore of Antarctica's McMurdo Sound to study the behavior of the seals in the wild.

## Wild Discoveries

Zapol and his colleagues generally made their trips during the Antarctic spring in October, when the sea ice is still thick enough to allow planes to land directly on it. The researchers lived and worked on the ice itself, on expeditions that lasted two or three months.

To allow the scientists to understand metabolically what happens when a seal dives at sea, Roger Hill, then a physicist and medical researcher at MGH, developed software and built a battery-operated computer that could be glued to a seal's dorsal fur. Other researchers were finding out how deep the seals went, but Zapol and his team wanted to learn more—to record the seal's heart rate, for example, and to sample and measure the amount of nitrogen in its arterial blood during dives. Hill's diving computer was able to record the seal's heart rate and depth at predetermined intervals. It also controlled an electric pump that took blood samples. Now all the team needed was a few willing research subjects.

The team gathered young male seals from colonies near the shore and sledged them to the study site, usually about five to ten miles offshore. The researchers would then have a three-foot-diameter hole drilled through the sheet of ice roughly six feet thick, in a place with no nearby cracks through which the seal could surface. "That way," Zapol says, "the seal couldn't swim away with ten thousand dollars worth of computer equipment on its back."

In a harmless process, the seals were anesthetized, catheters were inserted, and the computer was attached. When the seals recovered from the anesthesia, they entered the hole and swam away. Because they could swim only a few kilometers underwater, they had to return to the hole to breathe, so the researchers knew they'd be seeing the seals again at the end of each dive. Zapol found the seals to be wonderful to work with, recalling a particular favorite named Max—"After a while, you get to know the seals," he explains, "and even name some of them."

For shelter against the elements, the research team used a small hut on skis that was towed across the ice to the desired location. A hole cut out of the bottom of the hut was positioned over the hole in the ice. That room also housed a computer to retrieve data from the diving computer when the seals returned to breathe. Another small hut formed the research team's living quarters, complete with bunks, a cookstove, and a heater.

Zapol and his fellow researchers soon learned that the seals' diving responses did not quite match what they had seen in the laboratory. They found that 95 percent of the seals' voluntary dives were short, feeding dives, lasting less than 20 minutes; the animal would head straight down for its prey, the Antarctic cod, and then resurface. Only 5 percent of the dives lasted longer than 20 or 30 minutes; these longer dives would occur when the seal was exploring new territory or escaping from predators. The longer dives were characterized by



be submerged,” Zapol explains, “so it prepares for the worst.”

bradycardia with little variability of heart rate; on the shorter trips, the seal's heart rate would quicken and slow in accordance with its swimming speed. Yet in the laboratory, even short dives had evoked the response typical of a long dive. The reason? “In the laboratory, the seal doesn't know how long it will be submerged,” Zapol explains, “so it prepares for the worst.”

Zapol and his team also focused on what he refers to as two of the seal's great secrets: its use of the spleen as a storage tank for red blood cells, and its ability to collapse its lungs. Zapol and his colleagues estimate that the Weddell seal stores about 60 percent of its red blood cell supply in the spleen (humans store less than 10 percent). “The seal's spleen appears to be something of a contractile scuba tank in its ability to store and release red cells needed for diving,” Zapol says.

From their field studies, Zapol and his team also learned that the seals' lungs collapse at the beginning of each dive. This collapse decreases buoyancy, making it easier for the seal to descend, and limits the amount of nitrogen that can enter the blood during a dive. “When people go for a long dive, they breathe in, to fill up their lungs. Seals do the opposite; they breathe out when diving to help collapse their lungs,” Zapol explains. “It's such a smart technique; we found that out early when we measured the amount of nitrogen in their blood and noted that it didn't rise to the levels that a human scuba diver's would rise to.” Thus the seal is able to remain alert during deep dives, allowing it to find and capture its prey without succumbing to nitrogen narcosis.

The researchers also wondered if seal fetuses exhibit the diving reflex when their mothers descend. A heart rate monitor attached to pregnant seals showed that fetal heart rates slow during dives, though more gradually than the mothers' heart rates. “The fetus ‘knows’ when its mother dives,” Zapol says, “though exactly what informs it is not clear.”



A



C



**ON THICK ICE:** A. The Weddell seal can stay underwater more than 30 times longer than expert human divers. B. From left: Rager Hill, Warren Zapol, and Robert Schneider take a break outside their hut. C. Hill attaches a computer manitar to a seal's dorsal fur.

Zapol continues to be fascinated by many of the seals' behaviors, particularly the mechanism by which they can collapse and inflate their lungs, which will be a focus of future research. “Anyone with a reasonable amount of curiosity could spend a lifetime in Antarctica studying Weddell seals,” he says.

Although his work at MGH now takes priority over research expeditions, Zapol did travel to the Antarctic in Feb-

ruary 2000, this time as a guest lecturer and accompanied by his wife, Nikki, on a cruise sponsored by the Harvard Museum of Comparative Zoology. Instead of living for months in a hut on the ice, they stayed on a well-appointed ship and made only brief forays ashore. Still, Zapol says, “It was like going home.” ■

Susan Cassidy is assistant editor of the Harvard Medical Alumni Bulletin.



# COLD Comfort

AS TWO HMS ALUMNI KNOW ONLY TOO WELL, SUMMITTING A MOUNTAIN IS ONLY HALF THE BATTLE; YOU NEED TO BE ABLE TO DESCEND SAFELY AS WELL



**VERTICAL LIMIT:**  
Mount Cook is  
the spectacular  
yet dangerous  
peak that nearly  
cost two HMS  
friends their lives.



**VIEW FROM THE TOP:**  
Stephen Arnon in  
California's Kings Canyon  
National Park, not long  
after his Mount Cook  
adventure. Today, Arnon,  
who has collaborated  
on notional anti-bioterrorism  
efforts, heads  
California's program  
on infant botulism.



PHOTO: JOHN MERRIAM '76

## by BEVERLY BALLARO

**I**N MOUNTAINEERING, THE LINE BETWEEN adventure and disaster can run perilously thin. Survivors draw upon wits, guts, and pure luck to deliver themselves and their sometimes harrowing tales safely home. It was such a combination that saved Stephen Arnon '72 and George Merriam '75 during a climbing vacation turned wilderness survival marathon.

Merriam had cultivated a taste for adventure during his undergraduate days when, like Arnon, he belonged to the Harvard Mountaineering Club and served as president of the Harvard Outing Club. During his HMS career, he undertook some risky climbs in the Swiss Alps and Alaska, and later traveled to the Antarctic Peninsula.

Arnon, too, had endured his share of close calls over the years. Once, on an Alaskan expedition, he and his fellow climbers lost their bearings on rugged Mount St. Elias. A fierce storm had blown in off the Gulf of Alaska, burying the wands the men had used to mark their descent route, and forcing them to bivouac overnight in the blizzard. To find their way down from the summit in white-out conditions, the climbers had to move one

excruciating rope length at a time, fanning out pendulum-fashion until they stumbled across each buried marker.

When Arnon agreed to accompany Merriam on a 1980 climbing vacation, both men still enjoyed outdoor adventures, but they no longer sought out the kind of risky outings they had undertaken in the past. They set their sights on Mount Cook, a spectacularly beautiful mountain and the highest peak in New Zealand. To increase their margin of safety, they took the precaution of hiring professional guides familiar with the local terrain and New Zealand's notoriously capricious alpine weather. Ironically, it was the judgment of these experts that would lead Arnon and Merriam to their most dangerous adventure ever.

With an elevation of 12,349 feet, Mount Cook dominates the majestic Southern Alps. Arnon and Merriam's original plan called for them to tackle the standard route. After climbing other peaks with them, though, their guides felt that the men were strong and skilled enough to undertake "the Grand Traverse" of Mount Cook: they would first gain the main summit, then work sideways along the subsidiary peaks that make up the mile-long knife-

# our consternation when the three-foot handle poked

edged summit ridge. They would spend one night bivouacked on the ridge before descending more than 10,000 feet to park headquarters the following day.

Arnon and Merriam, along with their guides, departed around midnight. Darkness actually made for safer conditions, as their planned route traveled beneath a hanging glacier; by day, the sun's warmth would melt the ice and increase the threat of avalanche. Along the way, they decided to join up with another two-man team who happened to be climbing the same route. After a strenuous but exhilarating effort, the group arrived at Mount Cook's summit around noon.

## Nowhere to Hide

At the summit, an ominous sight awaited them. The climbers were startled to see, below their own elevation on the summit, enormous black clouds billowing toward them from the southwest across the Tasman Sea. Realizing that there would be no time to make a safe descent ahead of the approaching storm, the guides decided that the wisest course of action would be to sit out the weather in a sheltered bivouac. As part of their certification training, they had practiced emergency bivouacs in the uppermost crevasse located just under Mount Cook's Middle Peak. Unfortunately, the desired crevasse lay several hours of delicate climbing in the distance, and the storm engulfed the climbers well before they could reach its vicinity.

After much tense searching by flashlight through the blizzard, the guides were finally able to locate the snow-covered opening of the crevasse. Their discovery led to a cautious one-man exploration of its interior to confirm its stability. It appeared to be safe enough; besides, there was nowhere else to go. "It was a snug little ice cave," Merriam recalls, "just big enough for all six of us."

Their comfort was short-lived. Once inside, one of the climbers probed the crevasse floor with his ice axe. "You can imagine our consternation," Arnon says,

"when the three-foot handle poked cleanly through the floor to reveal a bottomless abyss below. Everybody moved a little more gingerly after that." Dehydrated and exhausted, the group settled down to sleep as best they could, consoled by the hope of completing the Grand Traverse the next day.

The mountain, however, had other plans for them. By morning, the blizzard had rendered the world outside the cave invisible. Arnon woke up unable to move his legs, because he was buried up to his waist in snow that had blown into the cave overnight. The climbers stamped the snow down as best they could, as they had brought along no shovels.

The guides also had neglected to bring stoves. In part, says Arnon, "It was a classic case of, 'Oh, I thought *you* were going to bring the stove.'" But, adds Merriam, "we had been well-equipped for our original planned route. We just hadn't anticipated a storm of that intensity." The specters of hypothermia and dehydration began to loom large in the climbers' minds.

As the storm continued to fill their cave with snow, Arnon remembered a maxim learned in boyhood. As a 12-year-old watching a mountain blizzard, he had heard an old Sierra Club lodgekeeper mutter, "Where the wind don't blow, the snow won't go." He immediately began fashioning a wall of snow blocks, cut one by one with an ice axe, to act as a barrier against the wind, and Merriam soon joined him. "Initially, the guides chuckled at our efforts," Arnon recalls, "but, in the end, those words of wisdom prevented us from being buried alive."

## The Perfect Storm

What the climbers could not know as they shivered in their ice cave was that they had stumbled into no ordinary storm. In a twist of fate, the weather map the guides had consulted before setting out ended just short of revealing a massive Antarctic airstream system. Such a pattern consists of a continuous eddy of powerful winds

that generate not one storm but a series of blizzards that can last up to two weeks.

During the brief interludes between storms, the climbers were able to emerge from their shelter and gaze down onto the coastal plateau to the west of Mount Cook. "The breaks lasted just long enough to tease us," Merriam remembers. "Ironically, it was harvest time in New Zealand. We could see farmers 12,000 feet below tilling their fields. The juxtaposition of the green, pastoral scene below us and the wintry, Alaska-like conditions that had us trapped high on the summit was absolutely surreal."

The guides took advantage of a slight break in the weather to traverse the face of the mountain and plant a series of ice axes in the snow. To these axes, they knotted orange plastic bags they had brought along to keep clothing dry. Their aerial markers set out, they scrambled back to the cave to pray that someone would see the distress signal. For the next couple of days, they could do nothing but wait.

"We were pretty miserable," Arnon remembers, "between the cold and the 100 percent humidity." Adds Merriam, "This was before synthetic water-shedding fabrics had become widely available. Our clothes and down sleeping bags were wet and freezing." The climbers' only food consisted of candy bars, which they carefully rationed. Their water supply had long since run out. To avoid further dehydration, they scraped snow into water bottles and then melted it by tucking the bottles into their armpits or groins. The guides remained confident that help would come. "After three days," Arnon recalls, "the Kiwis sent out a search party. They knew that, by then, we had to be either in the Middle Peak crevasse or dead."

The guides' ingenuity was finally rewarded when a search plane spotted the orange markers during a two-hour break in the storm. Unfortunately, being found was only the first step to being rescued. The summit of Mount Cook was too high for any available helicopter to carry off a group of people; at that altitude, the



# cleanly through the floor to reveal a bottomless abyss below.”

atmosphere was so thin that there simply wasn't enough air for the rotor blades to generate adequate lift. Besides, treacherous windshear conditions would have rendered any landing attempt impossibly dangerous, and there really was no landing place; the narrow summit ridge was delineated by sheer ice faces that dropped off several thousand feet on both sides.

A small helicopter did return the next day, however, and hovered near the crevasse entrance long enough to lower sacks containing hot soup, dry socks, a stove, and a two-way radio for communication with the outside world. “And, believe it or not,” Arnon recalls with a laugh, “those crazy Kiwi pilots also threw in some *Playboy* magazines.” One of the guides, worried about her frostbitten toes, promptly decided that the centerfolds made excellent insulation material for her boots.

Their magazines put to practical use, the climbers devised other ways to wile away the days. “Our minds were blank much of the time,” Arnon says. “Both the cold and boredom were numbing. Mostly, we just focused on trying to keep warm and drinking water to survive. But we did share our life stories with each other and we joked about our situation. George kept notes on the back of a topographic map and promised to acknowledge ‘the hospitality of the Middle Peak Hotel,’ as we had nicknamed our ice cave, if we ever got rescued.” Merriam, who had been a member of the Harvard Glee Club, also led the group in an occasional song.

The radio enabled Arnon and Merriam, who were about to miss their scheduled flight home, to take the rescue authorities up on their offer to relay messages to their families back in the States. “We didn't want to alarm anyone, especially when there was really nothing that anybody back home could do to help,” Arnon remembers. “I think the message we sent,” says Merriam, “was something subdued, along the lines of ‘Snowbound in mountain lodge, but safe and well.’”

Four days after their sighting by air and one week after their initial strand-

ing, the climbers received word of a projected daylong break in the storm and decided to seize the narrow window of opportunity. On a windy, cold, but sunny day, they continued the traverse until they could rappel from the summit ridge to a glacier some 2,000 feet below the ice cave. Their greatest obstacle on the climb down was *sastrugi*—small wind-carved asymmetrical elevations that snagged their ropes at every opportunity and substantially slowed their progress in the face of the storm's expected return. Working together as mountaineers, they raced against the clock.

Once on the lower shelf of the glacier, the climbers were airlifted to safety, two at a time. Both Merriam and Arnon were frostbite-free and relished the shock of being surrounded by greenery again after days of nothing but white and blue. They devoured a sumptuous celebratory meal to start replacing the more than 15 pounds each had shed during the ordeal. They also discovered that they were front-page news throughout New Zealand, having unintentionally set a record for the longest, highest bivouac in that country's history.

### Calm After the Storm

Asked afterward by television interviewers whether his experience on Mount Cook had altered his attitude toward climbing, Arnon responded with a resolute no: “We chose to be on that mountain in the first place. Risk is a part of the sport. We went for the aesthetic thrill that mountaineering provides.”

The ordeal transformed Merriam's outlook for the better: “After I got home, I found myself extraordinarily grateful for the little joys of daily life and much more tolerant of minor hassles.” He echoes Arnon's perspective on risk: “I still cherish the wilderness. Although I've steered clear of high-risk outings since becoming a father, I take my wife and daughter on hikes all the time. I continue to view the most dangerous part of

**NEW LATITUDE:** George Merriam stands atop Antarctica's Penguin Island in 1997. Merriam is a professor of medicine at the University of Washington, specializing in neuroendocrinology.



any adventure as the freeway drive there and back; I feel perfectly safe and comfortable out in the wild.”

Some years later, Arnon and Merriam learned that their record had been broken by another group of climbers who had gotten caught in a series of blizzards that raged for two full weeks. Although members of that later expedition survived, several lost parts of their feet to frostbite. The climbers in that group sought refuge in the very place that had previously sheltered the HMS friends and their companions.

The newer record will live on unbroken. Mount Cook's glaciers remain active; the Middle Peak crevasse, where Arnon and Merriam bivouacked in an Antarctic storm and lived to tell their tale, no longer exists. A decade after their historic adventure, it collapsed into a massive avalanche and disappeared forever. ■

Beverly Ballaro is associate editor of the Harvard Medical Alumni Bulletin.

# On call in the

## HOW CAN PHYSICIANS INCORPORATE ADVENTURE INTO THEIR LIVES—AND MEDICINE INTO THEIR ADVENTURES? *by* BEVERLY BALLARO

FROM SEA FLOORS TO MOUNTAINTOPS, SOME OF THE EARTH'S MORE majestic natural settings are attracting doctors interested in practicing their skills well outside the traditional confines of hospital and research laboratory. Extreme settings—windwhipped glaciers, steamy tropical jungles, and parched deserts—require extreme medicine, as well as doctors of a mindset and physical conditioning to enjoy the splendors and hardships of the wild. Many of those willing to take up the challenge report that their adventures have provided them with some of the most richly rewarding spiritual, intellectual, and athletic experiences of their lifetimes. Physicians seeking a crossover between medicine and adventure may turn to a number of organizations dedicated to creating this kind of connection.

The Wilderness Medical Society currently has more than 4,000 individual members. It was founded in 1983 to encourage and conduct activities and programs aimed at improving the scientific knowledge of its membership and the general public in matters related to wilderness environments and human activities therein. The society's research grant program offers significant funding for original projects at the medical student, resident, graduate, fellow, and postgraduate or member levels. Grants are awarded annually.

Society curriculum offerings, approved for continuing medical education credit, focus on a variety of topics: hazards of environmental exposure; cold and head injury; altitude illness; dive medicine; trauma; white-water injury; search and rescue; resuscitation; survival techniques; hazardous marine life; mammalian bites; venomous bites and stings; infectious diseases associated with travel; medical fitness for wilderness sports; nutrition for wilderness activities; and expedition medical planning.

Publications include the quarterly *Wilderness Medicine Letter*; the *Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care*, and *Wilderness and Environmental Medicine*. Abstracts and reprints of journal articles past and present are available through the society's web site.

The society holds its annual general meeting at a different location each summer and regularly hosts topic-specific meetings—on themes such as winter wilderness medicine and travel, desert, and diving medicine—featuring expert speakers drawn from the outdoor community. In addition, it arranges quadrennial World Congresses to review the status of wilderness medicine activities around the globe. Detailed descriptions of upcoming courses and meetings can be found on the the society's web site. Events scheduled to take



PHOTO: COURTESY OF THE HIMALAYAN HEALTH EXCHANGE

**ST. ELSEWHERE:** A Himalayan Health Exchange physician examines a young patient.



place in 2001 include: a winter wilderness and travel medicine course in Colorado; a Great Smoky Mountains wilderness medicine seminar in Tennessee; and a marine and dive medicine course in Mexico.

The **International Society of Travel Medicine**, which has 1,200 members in 53 countries, is committed to the promotion of healthy and safe travel. The society facilitates education, service, and research activities related to topics such as: preventive and curative medicine; tropical medicine; infectious diseases; high-altitude physiology; travel-related obstetrics; psychiatry; occupational health; military and migration medicine; and environmental health. Grants are available through a peer-reviewed, competitive process to members interested in travel medicine research, and a clinical trials network conducts collaborative research. Physicians can receive continuing education credits.

The society holds a biennial conference; offers a quarterly publication, the *Journal of Travel Medicine*; and publishes a quarterly newsletter called *NewsShare*. The society's web site includes a travel clinic directory and features updates on travel medicine, outbreak information, and opportunities for communication with travel medicine colleagues.

The **International Society of Aquatic Medicine** was formed in 1975 by physicians whose common interests centered around scuba diving and diving medicine. The society offers unique opportunities to dive in exotic places and, at the same time, to obtain knowledge and earn continuing medical education credit. It organizes programs on topics such as hyperbaric medicine, diving safety, venomous animal stings and bites, and the diagnosis and treatment of diving injuries. The society also publishes a quarterly to keep its 1,800 members abreast of new developments in diving medicine.

The **Mountain Rescue Association**, established in 1958 to improve care of the sick and injured in the

mountains, is a volunteer organization dedicated to saving lives through rescue and mountain safety education. It consists of more than 80 units in the United States, Canada, and other countries. Medical skills and certifications, as well as the ability to work with a team, are among the considerations for membership.

The **Himalayan Health Exchange** is a humanitarian program founded in 1996 with the mission of providing medical and dental care to underserved people living in remote regions of the Himalayas and of uplifting two orphanages located in the northern Indian state of Himachal Pradesh. Each expedition offers participants a combination of service and adventure.

Since its founding, the exchange has run 14 health expeditions that have served between 1,100 and 1,700 patients on each trip. Expedition teams consist of no more than 16 participants and have included internists, pediatricians, surgeons, ophthalmologists, cardiologists,

gastroenterologists, dentists, nurses, medical students, and support personnel. In addition to treating underserved populations, expedition members enjoy hiking trips and overland journeys rated on a scale ranging from mild to moderate to strenuous.

The 2001 schedule of expeditions to the Tibetan borderlands and the Indian and Nepali Himalayas includes trips to: Dharamsala, home to the fourteenth Dalai Lama, with a visit to the Taj Mahal; Lukla, Nepal, with a trek to the Everest Base Camp; Ladakh, in the Indian Himalayas; Chang Thang Plateau, along the Indo-Tibetan border with a visit to Tso-Morari Lake, located at an altitude of 15,000 feet; Spiti-Dharamsala, also known as the ancient Tibetan kingdom of "Guge"; and Goa, founded as a sixteenth-century Portuguese colony on the west coast of India and renowned for its beautiful clear-water beaches. ■

*Beverly Ballaro is associate editor of the Harvard Medical Alumni Bulletin.*

# MEDICINE

## EXTREME

### **Wilderness**

#### **Medical Society**

3595 East Fountain Blvd.  
Suite A-1  
Colorado Springs, CO 80910  
Phone: 719-572-9255  
Fax: 719-572-1514  
[www.wms.org](http://www.wms.org)

#### **International Society of Travel Medicine**

P.O. Box 871089  
Stone Mountain, GA 30087  
Phone: 770-736-7060  
Fax: 770-736-6732  
[www.istm.org](http://www.istm.org)

#### **International Society of Aquatic Medicine**

6240 Turtle Hall Drive  
Wilmington, NC 28409  
Phone: 910-452-1542  
[www.divingdocs.org](http://www.divingdocs.org)

#### **Mountain Rescue Association**

P.O. Box 501  
Poway, CA 92074  
[www.mra.org](http://www.mra.org)

#### **Himalayan Health Exchange**

P.O. Box 610  
Decatur, GA 30031  
Phone: 888-278-8735  
[www.himalayanhealth.com](http://www.himalayanhealth.com)

# Unburied

The newly displayed artifacts in Harvard's Warren Anatomical Museum reveal both the outer limits and the ingenuity of medicine on the threshold of modernity



by VIRGINIA HUNT

HOW DO YOU DISTINGUISH AN AUTHENTIC SHRUNKEN HUMAN HEAD from a fake? This inquiry was part of a day's work for the curators of the Warren Anatomical Museum. After years in storage, a selection of the museum's contents is again on display, this time in the Countway Library of Medicine. The anatomical specimens may strike contemporary sensibilities as macabre, yet, historically, the collection served as an important teaching tool. As for the authenticity of shrunk-en heads, an abundance of lustrous hair is a dead giveaway. Visit the Countway for a glimpse into the medical past.

## Operating with Carbolic Spray

*Joseph Lister (1827–1912), Glasgow, Scotland*





# treasures



Joseph Lister (1827-1912) was responsible for introducing effective techniques for antisepsis. He advocated the use of carbolic sprays, such as this one, during surgery. They proved unpopular with surgeons, however, because their contents were messy and smelled unpleasant, and Lister eventually abandoned his invention. The antiseptic Listerine was later named in his honor.

# Unburied treasures



## FIRST DEMONSTRATION OF ETHER ANESTHESIA, 1846

JOHN COLLINS WARREN'S GREATEST TRIUMPH OCCURRED IN THE FALL OF 1846. After conducting his entire surgical career without the benefit of anesthesia, he heard about a young dentist, William T. G. Morton, who was extracting his patients' teeth painlessly by having them inhale a secret ingredient called Letheon. One of Warren's assistants, Henry Bigelow, called upon Morton to conduct a public demonstration of his new invention. On October 13, 1846, Morton administered his preparation to Warren's patient, a 21-year-old painter who had visited Massachusetts General Hospital for the removal of a tumor on his neck. When the procedure was over, Warren famously exclaimed, "Gentlemen, this is no humbug!"

Morton later tried to patent his mysterious anesthesia. Yet Warren, fearful of the risks to his patients, refused to continue using the secret substance unless Morton disclosed the exact contents. Morton confessed that Letheon was merely ether disguised with red coloring and aromatic flavors.

Charles Jackson, a chemist who had supplied Morton with ether and suggested he use it to allay his patients' pain, attempted to claim for himself the discovery of ether anesthesia. The controversy still lingers.







## PHINEAS GAGE, 1823–1860

**I**N 1848, AN ACCIDENTAL EXPLOSION PROPELLED A 13-POUND TAMPING iron straight through the head of a railroad construction foreman, Phineas Gage. The rod pierced his face just under his left cheek, exited through the top of his skull, and landed several yards away. The accident destroyed the front part of the left side of Gage's brain. Incredibly, almost immediately after the accident, he was conscious and able to talk and walk. After ten weeks of treatment, he returned home to Lebanon, New Hampshire.

Unfortunately, Gage's recovery was not a complete success. The once well-liked man became "fitful, irreverent, and grossly profane." Those who knew him before the accident said he was "no longer Gage." The miracle of Phineas Gage illustrates an early medical insight into the relationship between personality and the frontal lobe of the brain.

## Monaural Stethoscope

*René Laennec, 1819*

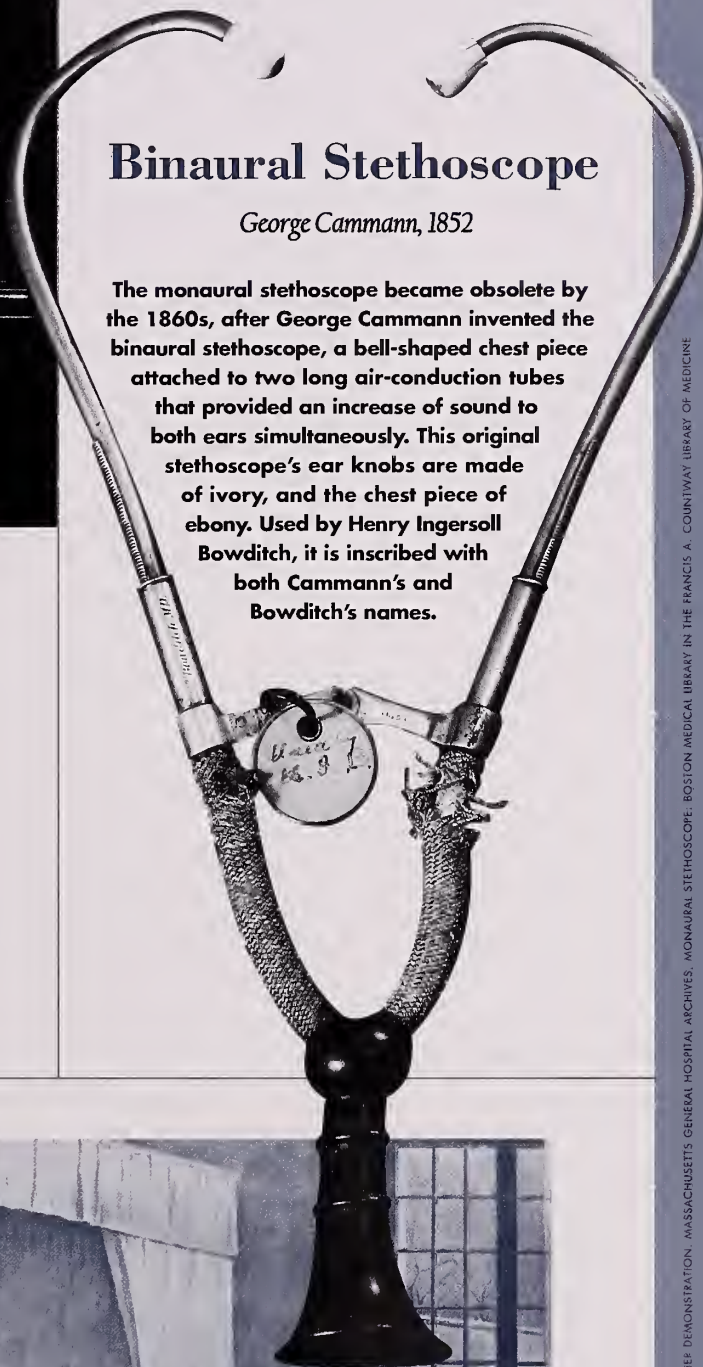
**I**N 1816, René Laennec, an expert in chest diseases, was examining a young woman with heart problems. Painfully shy, he could not bring himself to press his ear to her chest, the only known method of auscultation. Remembering a childhood trick of scratching the end of a log with a pin to transmit a sound, loud and clear, from one end to the other, he made a "log" by rolling sheets of paper into a cylinder. He applied one end to the woman's chest and the other to his ear and was surprised by the clarity of her heartbeat. This led, in 1819, to his invention of the monaural stethoscope, a solid wooden cylinder with a drilled center that could be unscrewed for carrying in the pocket. At one end, a chest piece auscultated the heart; when the chest piece was removed, the large opening could be used to listen to the lungs. By the 1850s, Laennec's stethoscope had become a mainstay of the physical examination.



## Binaural Stethoscope

*George Cammann, 1852*

The monaural stethoscope became obsolete by the 1860s, after George Cammann invented the binaural stethoscope, a bell-shaped chest piece attached to two long air-conduction tubes that provided an increase of sound to both ears simultaneously. This original stethoscope's ear knobs are made of ivory, and the chest piece of ebony. Used by Henry Ingersoll Bowditch, it is inscribed with both Cammann's and Bowditch's names.



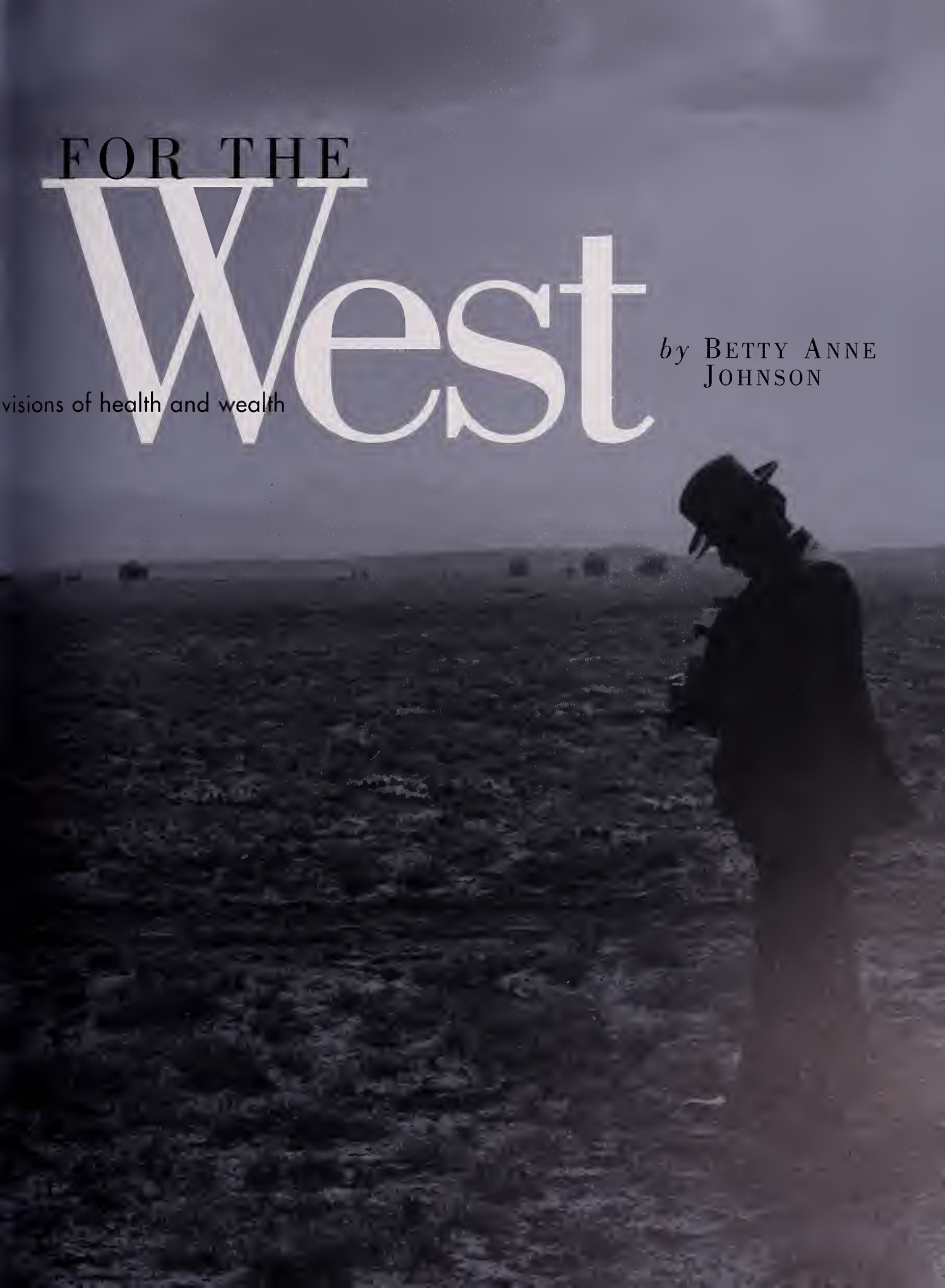
# Quest

The Rocky Mountain West tantalized nineteenth-century American settlers with twin



PHOTO: COURTESY OF THE SHOSHONE IRRIGATION DISTRICT, BOWEN





# FOR THE West

visions of health and wealth

*by* BETTY ANNE  
JOHNSON

I  
N AUGUST 1911, MY GRANDFATHER, GUS BECK-  
mann, stepped off the train at the depot  
in Powell, Wyoming, the small boom  
town that had sprung up at the center  
of the Shoshone Dam Project. Excite-  
ment charged the air. The hotels were  
overflowing with continually arriving new  
settlers attracted by the homesteading  
opportunities. Commercial buildings were

being rushed to completion, and the  
main street bustled, a local reporter  
wrote, with "great, strong, stalwart,  
well-dressed and intelligent-looking  
men" who exuded a spirit of enthusi-  
asm and optimism for the future of the  
town and the Shoshone Project.

Gus instantly fell in love with the  
wide-open, semi-arid rolling plains  
that surrounded Powell. Earlier, a  
Wyoming State immigration agent  
had rhapsodized about the beauty of  
the place: "I am of the opinion that  
God Almighty made Wyoming during  
the latter part of the week, for surely  
he could not have turned out such a  
fine job without four or five days' prac-  
tice. It is without a doubt one of the  
grandest and most resourceful states  
in the union and, so far as I have seen,  
there is not a better country, all things  
considered, than this new, undevel-  
oped, awkward, crude, big, grand, glo-  
rious, wild, picturesque Wyoming."

Sagebrush, bunch grass, and cactus  
covered Gus's newly adopted land,  
which provided a haven for rat-  
tlesnakes, jack rabbits, coyotes, sage  
hens, and prong-horned antelope.  
Where settlers had developed home-  
stead claims lay neat, green, fenced-in

fields with irrigation ditches and an  
acre or two set aside for the farmhouse  
and vegetable garden. The Flat, as this  
high plains desert would come to be  
known, was ringed by spectacular  
mountains on all sides, including  
Heart Mountain to the west, a craggy,  
limestone-capped peak that would  
later come to symbolize the town and  
the area. The dry, thin air, tangy with  
the scent of sage, made it seem possi-  
ble to see forever.

### Go West, Young Man

The clean, rarefied atmosphere of  
Wyoming held powerful appeal for  
Gus. Like many settlers, he had trav-  
eled west seeking not just adventure  
and opportunity, but also improved  
health. The notion that the climate of  
the Rocky Mountain West was con-  
ducive to excellent health had enjoyed  
wide currency ever since Mark Twain,  
in his 1872 autobiographical account,  
*Roughing It*, had published a description  
of the region around Lake Tahoe: "I  
know a man who went there to die.  
But he made a failure of it. He was a  
skeleton when he came, and could  
barely stand. He had no appetite, and







B

**O, PIONEERS:** Clockwise from top left: A. Edith and Junior Beckmann  
B. The Beckmanns, circa 1925: Anna, Edith, Junior, and Gus C. Gus Beckmann at age 23



C

did nothing but read tracts and reflect on the future. Three months later he was sleeping out of doors regularly, eating all he could hold, three times a day, and chasing game over mountains three thousand feet high for recreation. And he was a skeleton no longer, but weighed part of a ton. This is no fancy sketch, but the truth. His disease was consumption. I confidently commend his experience to other skeletons." In the decades following Twain's pronouncement, many health seekers and their families had made the journey west, most notably to New Mexico, Colorado, and—to a lesser extent—Nevada, Utah, and Wyoming.

The experience of illness had driven Gus west, too. The first-born son of German immigrants, he had grown up on a farm in the American Bottom, a low, level area in southwestern Illinois. The land in the Bottom, although made rich for farming by the repeated flooding of the Mississippi River, was





swampy, and the local climate damp. Typhoid, malaria, and tuberculosis ran rampant. Years later, Gus would recall with a shiver the nasty taste of quinine, which he had taken for the malaria he had suffered while living in the Bottom.

Within a few weeks of his arrival in Wyoming, Gus filed on a homestead immediately north of the town of Powell and joined approximately 300 families who had already settled upon government homestead land within a six-mile radius of town. For the next two years, he sent long, descriptive,

enthusiastic letters home to his sweetheart, Anna Zippel, trying to persuade her to join him on the Project. He wrote of the gorgeous landscapes, the economic opportunities, and, of course, the healthy atmosphere.

For Anna, whose sister and half brother had died of tuberculosis, the promise of good health must have exerted particular attraction. But Anna, a six-foot, dark-haired beauty, also the daughter of German immigrants, was not at all sure she wanted to leave her close-knit family and move to the other side of the world,

even if it was irrigated. In the end, though, Gus's powerfully worded letters won her over. When she finally left home for the frontier, she was married to a man she knew largely through correspondence.

### Frontier Medicine

In 1911, the raw frontier town in which newlyweds Gus and Anna would set about building a life was very much a work in progress. Powell had a local government, a chamber of commerce, schools, and churches. But

### SIGNS OF THE TIMES

Public health notices and advertisements gave health advice to residents of Wyoming's developing frontier.



**LORE OF THE FLIES:** The role of the housefly in the spread of typhoid was greatly exaggerated. Consumers were urged to buy fly swatters, fly paper, fly poison, flytraps, and window and door screens.

### The Doctors Say

If you wish to preserve your health you **MUST SWAT** the **FLY** . . .

ONE fly killed now means death to thousands before fall.  
Do your share to make this a flyless community.  
Get a **FLY SWATTER**, a **FLY TRAP**, **FLY PAPER** and **FLY POISON** at

Watson-Longley Hdw. Co.



"I am of the opinion that God Almighty made Wyoming during the latter part of the week, for surely he could not have turned out such a fine job without four or five days' practice."

many of the attributes of modern civilization had yet to be established, chief among them provision for adequate health care and the establishment of public health ordinances. The town had attracted a number of physicians, despite this assertion by the editor of the local newspaper: "The Powell valley looks anything but flattering to members of the medical profession as our people never get sick. Doctors and undertakers will find Powell hard sledding; everybody else will prosper in comparatively abundant measure."

The first doctor on the Project was likely an unlicensed homeopath, who also co-owned the drugstore. By 1911, two licensed physicians had settled on the Project, subsidizing their medical practices with other enterprises. No hospital existed until 1915, when a graduate nurse from Philadelphia established one in a rented cottage. Although it had no operating room, laboratory, or x-ray facilities, it provided a haven for women during their confinement and allowed supervised nursing care for the sick and injured.

The Wyoming State Board of Health approved rules and regulations governing not only the licensing of physicians, but also the containment of contagious diseases. By 1906, when the Pure Food and Drug Act was enacted, Wyoming had appointed a dairy, food, and oil commissioner, as

well as a state chemist. Together, they collected and analyzed samples of canned foods, soft drinks, whiskey, dairy products, drugs, oil, and water to assure purity and accuracy of labeling. The commissioner traveled the state inspecting creameries, meat markets, hotels, restaurants, well water, and town water. The Pure Food and Drug Act met with skepticism at first, particularly on the part of merchants, but consumers endorsed it heartily, as evidenced by excerpts from a ditty popular at the time:

*To market, to market, and what shall we buy?*

*The bread trod upon by the germ-bearing fly?*

*Shall we buy from the dealer who keeps his best rice*

*In an open receptacle harboring mice?*

Thanks to the Project's largely rural setting and the small size of the town, epidemics of the sort that plagued large cities remained relatively uncommon. Yet Project life carried its own unique hazards. The major causes of morbidity and mortality were dam and canal construction accidents, blasting and farming mishaps, injuries created by runaway teams of horses, rattlesnake bites, bear attacks, and drownings.

## Shoo, Fly, Shoo

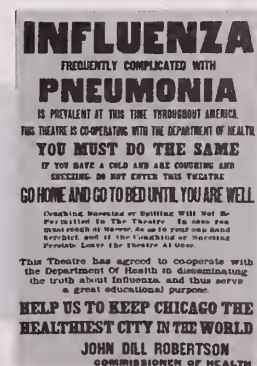
The settlers in Gus's community had to contend with a host of contagious ailments, including enteric diseases, most notably typhoid. Infections causing diarrhea, such as dysentery, were common. Children developed "summer complaint," for example, when they waded in running water, whether streams, rivers, canals, or irrigation ditches. The settlers also suffered from respiratory diseases such as smallpox, diphtheria, scarlet fever, measles, whooping cough, and influenza. To help contain the spread of contagious illnesses, local physicians and county health officers adopted three main public health strategies: sanitation, isolation, and vaccination.

The story of sanitation is largely the story of the containment of typhoid fever. Early on, the United States Reclamation Service (USRS) had recognized the danger of typhoid fever as a public health menace. A 1907 outbreak at a construction camp just five miles from Powell resulted in burials "day and night." Construction workers were often typhoid carriers, leaving a trail of deathly ill coworkers in their wake as they moved from camp to camp. Although the source of most typhoid epidemics was contaminated water and, to a much lesser extent, a contaminated milk supply, many well-meaning public health officials exaggerated the role of

**DR. STRANGELOVE:** Harvey Washington Wiley, chief chemist of the U.S. Department of Agriculture, demonstrates *osculatio antiseptica*, or sanitary kissing, which never caught on.



**NOTHING TO SNEEZE AT:** A notice advising sick people to avoid spreading germs states, "Coughing, Sneezing or Spitting Will Not Be Permitted in the Theatre. In case you must cough or sneeze, do so in your own handkerchief."



# Swatting flies became a civic duty, and schoolchildren were awarded prizes for bringing in the most quarts of flies.

the housefly in spreading typhoid. The press eagerly seized the “dangerous housefly” theme and ran article after article, asserting that the housefly “is known to carry the germs of typhoid fever, tuberculosis, dysentery, cholera, cholera infantum—in fact, any dangerous bacterial disease with which it comes in contact.” The “filth theory of disease” made sense to the public, who enthusiastically embraced “Swat the Fly” campaigns.

*Baby by  
Here's a fly!  
Let us kill him  
You and I  
Ere he crawls  
Up the walls  
And dire ill befalls*

*I believe on those six legs  
Are a billion typhoid eggs  
There he goes  
On his toes  
Tickling Baby's nose  
Now we must run right away  
For the antiseptic spray  
To sterilize where the fly's  
little microbes stray*

People waged war against the fly on many fronts. Privy vaults were dug deep, with screens erected and sand thrown in daily, or chloride of lime weekly. Kitchens, dining tents, and meathouses were screened; one settler recalled the frequent sight of an antelope hanging in the screened USRS meathouse outside the government eatery.

Swatting flies became a civic duty, and schoolchildren were awarded prizes for bringing in the most quarts of flies. Flytraps, fly catchers, and fly swatters were sure draws at the local hardware store, whose owners urged each family to keep a fly swatter in every room in the house. Even *The Lancet* was quoted in the local newspaper: “The best and simplest fly killer is

a weak solution of formaldehyde in water (two teaspoonfuls to the pint). Place in plates or saucers throughout the house. Ten cents worth of formaldehyde will last an ordinary family all summer.” The Montana State Board of Health issued a “fly bulletin” with a recipe for “New Dope for Flies.” The recipe, similar to that proposed by *The Lancet*, was enhanced by placing slices of bread in saucers to encourage flies to alight and feed. The bulletin stated that 40,000 flies—or four quarts—had been killed with the mixture between noon on one day and eight o'clock the next morning.

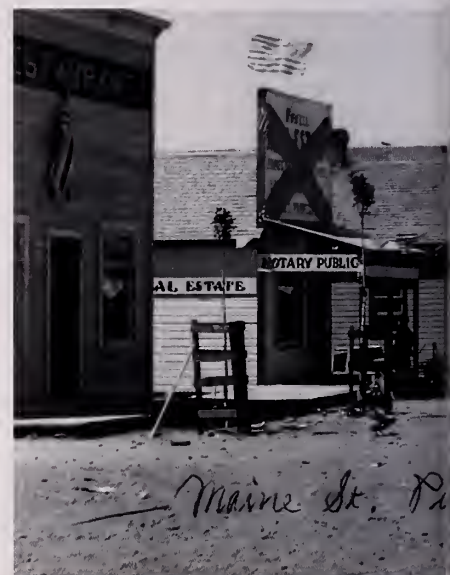
During this time, “sanitary” became a popular buzzword both in Wyoming and nationwide. Powell boasted a Sanitary Meat Market, a Sanitary Creamery, a Sanitary Grocery, and a Sanitary Soda Fountain. Harvey Washington Wiley, chief chemist of the U.S. Department of Agriculture—who was largely responsible for the passage of the Pure Food and Drug Act—even demonstrated *osculatio antiseptica*, or sanitary kissing, which, somehow, just never caught on. In the end, however, public health officials gradually realized that the major source of typhoid epidemics was not the common housefly but a contaminated water supply.

## Not a Drop to Drink

Ironically, one of the most enduring problems the early settlers on the Project faced was finding an adequate supply of clean water. The USRS had arranged for a seemingly inexhaustible supply of irrigation water for crops and gardens but had made no provision for water for drinking or household use. To his consternation, Gus, who had fled to Wyoming in part because of a severe drought that afflicted his previous home, found that the well on his homestead overflowed with alkali-poisoned water as the water table rose. Even the chickens

refused to drink it. Until the town waterworks went in, he was forced to haul water from the well in town, and Anna collected rainwater from the gutters because the water on the Project was so hard with mineral salts.

During the summer, settlers either hauled or piped their water from the irrigation canals, but this source dried up in the fall when the USRS turned the water off. Other settlers drilled wells, but by the end of the 1909 farming season, a new problem arose: all over the Project, the topsoil was relatively alkaline and the ground water table relatively high. When water was applied in amounts sufficient to grow crops, the ground water rose and con-



centrated alkali salts in the root zone, killing or damaging the crops.

The settlers who were lucky enough to live close to the Shoshone River hauled their water from the river in 50-gallon barrels. But obtaining canal or river water for drinking purposes was time consuming. After the water had been hauled or piped to the





A

**LITTLE HOUSE ON THE PRAIRIE: A.** Edith and Gus Beckmann's original home-  
stead. **B.** A picture of downtown  
Powell in 1911, when it was just on  
its way to becoming a boom town.



B

PHOTO: COURTESY OF LUCIER COLLECTION, NORTHWEST COLLEGE ARCHIVES

house, the settlers had to remove large particles, then use charcoal filters to remove the smaller solids. Water was poured through charcoal into deep cisterns and thereafter, if plumbing had been installed in the house, the water was pumped into the house and through a faucet to which a flannel bag full of charcoal had been attached.

The bag was periodically removed, to allow the charcoal to be baked and the flannel to be washed.

Unfortunately, not every settler was willing to engage in all of the requisite steps to assure the purity of the drinking water. Furthermore, no formal provision was made for the disposal of sewage except in individually owned

privies or septic systems. A privy or leaky septic system located near a settler's well could quickly result in a typhoid outbreak, if the settlers neglected to boil or treat their drinking water. Such was the case in Powell in the fall of 1915, prior to the installation of the town waterworks, when townspeople, including schoolchildren, began falling ill with typhoid. As a result of this outbreak, the citizens were warned not to drink water from any town wells, an admonition that served as the final impetus for the implementation of Powell's waterworks, which were installed in the winter of 1915.

### Danger in the Air

While new sanitation efforts helped contain typhoid outbreaks, isolation and vaccination were used primarily to contain respiratory diseases. Smallpox cases were dealt with swiftly and severely. Infected people were subjected



**WATER BABIES:** Children from the Shoshone Project liked to go wading in all forms of running water, which often gave them "summer complaint." Edith Beckmann is pictured second from left; her brother, Junior, is on the far right.





# One of their children contracted measles and the household was subjected to a quarantine until the infection passed.

to "absolute quarantine" either in a "pest house," a building constructed just for the purpose of isolation, or within their own homes, which were placarded with quarantine notices. Absolute quarantine meant that only physicians and immune family members were allowed to enter the premises of the patients. Vaccination and quarantining of those exposed to a smallpox case also were mandated, and reentry to society could take place only after the incubation period of the disease had been exceeded and thorough disinfection of the infected people, their clothing, and their personal property had taken place.

People with diphtheria also were isolated, but in "modified quarantine," usually within their homes. These patients were treated with diphtheria antitoxin and allowed to reenter society two weeks after complete resolution of their symptoms. Measles, whooping cough, and scarlet fever cases also were quarantined in the home; Gus experienced this firsthand when, before he brought Anna west, he rented his house to a family who cooked and cleaned for him. One of their children contracted measles and the household was subjected to a quarantine until the infection passed.

Scarlet fever quarantines were the most problematic, because family members of the infected were not allowed back in school until 30 days after recovery of the infected. Settlers often tried to hide infected family members. This issue came to a head when the newspaper reported a case of scarlet fever, noting that no physician had been called to the home and no quarantine was being observed. Before the doctor could even investigate, he had to obtain permission from the county health officer in Cody. Having done so, he showed up uninvited at the home and put up the requisite ticket, but the family continued to violate the quarantine.

It would not be long, however, before the value of quarantining

became universally accepted in terms of isolation of the sick as well as reverse quarantining—that is, isolation of the healthy. Although unrecognized at the time, the first death on the Project from the influenza pandemic of 1918–19 was probably the Beckmanns' next-door neighbor, Otto Schacht, the local baker, who died in the spring of 1918 at the age of 31. Schacht had become ill while caring for his ailing father in Illinois, and returned to the Project to be treated in the local hospital. His obituary notes that he was critically ill from the start and death came swiftly. Notably, his father, presumably ill with the same infection, survived, accenting what later came to be universally accepted as true, that this influenza virus was most virulent to those in the prime of life.

The second wave of the influenza pandemic hit Powell in November 1918, but because of immediate and complete action by the county health officer and the local physicians in response to directives from the State Board of Health, Powell emerged unscathed compared to other Wyoming communities. Whereas other cities engaged in "Don't spit, don't sneeze" campaigns or promoted the use of gauze face masks and ineffective vaccines, Powell simply shut down, and public gatherings of any kind were prohibited from October 1918 through January 1919.

## An Ounce of Prevention

Over time, the State Board of Health focused on preventive medicine rather than just the investigation and management of outbreaks. In 1915, Wyoming passed a law requiring schoolteachers to perform an eye, ear, nose, and throat examination on each student at the beginning of each school year based on such issues as whether pus or a foul odor proceeded from either ear, or whether the pupil was a habitual mouth breather. If any of the questions was answered in the affirmative, the

schoolteacher was instructed to send a report to the student's parents, but the law provided for no further action.

Gradually, more physicians moved into Powell. One of these, a surgeon, built a modern hospital, complete with laboratory, x-ray machine, and operating room, and saved many a sick and injured Powell settler from a four-hour train ride to Billings, Montana. Public health nursing, with its emphasis on health education and maternal and infant hygiene, flourished after the passage in 1921 of the Sheppard-Towner Act, which called for state and federal funding to promote prenatal and postnatal care. Civilization had finally arrived.

In the end, though, while civilization triumphed, the dream of good health that had drawn Gus Beckmann and his family to the promised land of Wyoming proved elusive. Gus died in 1926 at the age of 39 after a bout of influenza complicated by pneumonia. After two weeks in the hospital, he had recovered from the pneumonia; his family was en route to pick him up when he abruptly arrested, probably of a massive pulmonary embolus, before the stricken eyes of his attending nurse. Gus's son, Junior, drowned at the age of 28 in a local reservoir, part of the same irrigation system that had given life to the Project. Gus's wife, Anna, struggled with severe asthma her entire life, and their daughter, Edith, contracted rheumatic fever in the pre-penicillin 1930s. Yet these events could have happened anywhere. Somehow it made them less tragic to have unfolded in pursuit of a cherished dream to tame this "new, undeveloped, awkward, crude, big, grand, glorious, wild, picturesque Wyoming." ■

*Betty Anne Johnson '79 is professor of medicine at Virginia Commonwealth University School of Medicine. The daughter of Edith Beckmann, she grew up on Gus Beckmann's homestead, for which she is seeking a National Historic Register listing.*



## Providing Care for Circumcised Women

**A**S A YOUNG GIRL GROWING UP in Egypt and the Sudan, Nawal Nour '94 encountered a cultural tradition that would have a far-reaching influence in her life, leading her to enroll at HMS and, later, to found a clinic for African women. That tradition, the practice known as female circumcision or female genital mutilation, is one that Nour is now committed to helping eradicate. She travels throughout the United States conducting workshops to educate African refugees on the medical and legal issues surrounding the practice. She created a slide-lecture kit to teach physicians about the medical management of circumcised women. And every Friday morning, she sees patients from Boston's African community, primarily from Somalia, where the most severe form of female circumcision is performed.

In many African countries, girls between the ages of five and twelve undergo female circumcision as a rite of passage. The procedure can range from a slight nicking or burning of areas around the genitals to complete removal of all external genitalia, leaving a flat sheet of skin with a very small opening. Female circumcision is carried out with special knives, scissors, scalpels, pieces of glass, or razor blades. The procedure generally lasts 15 to 20 minutes. Anesthesia is not used. Immediate complications can include hemorrhage, infection due to unhygienic conditions, shock due to bleeding and severe pain, and even death. Once the tissue has healed, circumcised women have problems with menses, chronic bladder infections, pain

on intercourse, difficult childbirth, and many other symptoms.

The exact origins of the procedure are unknown. "Some people say that it originated in ancient Greece, ancient Rome, Czarist Russia," Nour says. "We just don't know." Regardless of its origins,



**SENSE AND SENSITIVITY:** Nawal Nour promotes what she terms "culturally competent care" for African women who have been circumcised.

the procedure has a strong cultural hold in many African countries, where circumcision is believed to usher young girls into adulthood as virtuous and marriageable women. Nour remembers

schoolmates talking about having their procedures done and about the accompanying celebration, and asking her when her turn would come. But Nour's parents were strongly opposed to the practice. At age 14, she left Africa to attend high school at the American School in London. Nour received her undergraduate degree at Brown University, where she focused on African women's issues and wrote her thesis on the emancipation of Egyptian women. And although she wasn't working directly on the issue of female circumcision, it was never far from her thoughts.

Nour knew she wanted to work to improve conditions for women, but wasn't sure what approach to take—should she attack women's issues from a legal standpoint, by going to law school, or a health angle, by attending medical school? After reading *One L*, Scott Turow's harrowing tale of the life of a first-year law student, Nour leaned toward medical school. She also realized that a medical degree would allow her to work more globally. "Medicine is such an international skill," she points out. "I could go from one country to another and practice medicine, but that would be hard to do with law."

After receiving her medical degree, Nour completed a chief residency in obstetrics and gynecology at Brigham and Women's Hospital in 1998. As her reputation in the community grew, more and more circumcised African women, particularly members of Boston's Somali community, began showing up at her practice. "Initially they just wanted to see a doctor who understood and didn't make a big

deal about the fact that they were circumcised," Nour says.

Circumcised women often must deal with reactions of shock and horror when they are examined by doctors unfamiliar

PHOTO: RICK FRIEDMAN



with the procedure. Communication barriers can make the situation even worse, as frustrated health providers try to convey important information to patients who don't speak the same language. Nour soon realized the value of a clinic specifically designed to treat circumcised women, and the African Women's Health Practice opened at Brigham and Women's Hospital in July 1999.

Nour sees about eight to ten patients a week in her Friday clinic, which is slowly beginning to spill over into other days. Because most of her patients have undergone Type III circumcision, the most severe form, Nour often performs a procedure called deinfibulation. She puts a patient under a spinal or general anesthesia, makes a vertical skin incision, and sutures the tissue on both sides. As a result, patients report that pain on menses, urination, and intercourse is greatly decreased. Difficulties with childbirth can be eliminated as well.

But Nour also asks patients how they feel about the way they look after the surgery. "The majority of patients have been brought up to believe that to be circumcised is to be more beautiful," she says, and the surgery results in a major change. This sensitivity to her patients' beliefs is at the heart of Nour's focus on "culturally competent care."

Nour makes sure to involve husbands in the process whenever possible. "Female circumcision is a tradition that separates men and women, and I'm trying to bring the two together," she says. "I want deinfibulation to be a joint decision; I want it to be something that they both get educated about. Many times the men don't understand the kind of pain that the women have undergone." Nour says that in most cases, the men are very willing to learn about the procedure. Some of them are extremely uncomfortable discussing it, but others "will actually ask many questions and say, 'Thank you, I had no idea.'"

In addition to caring for patients and teaching at HMS, Nour is committed to educating health providers and the gener-

al public. "Female circumcision is a horrible tradition and it needs to be stopped," Nour says. "But health providers need to see each patient as an individual." Often circumcision can become the focus of a visit, when that was not what the patient intended. "Women who have been circumcised are women who have other health problems and are coming to see a health provider for those problems."

When Nour gives lectures to physicians, she displays slides of the various types of female circumcision, and then leaves up the slide of Type III for a long time. "I want you to get used to this," she tells her audience. "Although it is horrible, you need to absorb it and understand your feelings about it, because you need to deal with those feelings outside the office. That way, when you see your patient, you're not going to bring those feelings in with you."

Such efforts to increase awareness of female circumcision have begun in the United States only in recent years, as the African immigrant population in the country has increased. Nour's goal is ulti-

mately to reach as many physicians as possible. "If I can educate a large number of health providers on how to feel comfortable providing this type of care, then we won't need specific clinics," she explains.

Although she wants to continue providing care to African women in her Friday clinic, in the future Nour also plans to concentrate on efforts to eradicate the procedure. "I'm hoping to do much more outreach nationally and internationally, to be able to network with other organizations," she says. When asked what she does in her spare time, Nour immediately responds that she travels a great deal—an interest closely linked to the issue she has made her life's work. She hopes to return to the Sudan sometime this coming year. Not surprisingly, the trip would be more than just a vacation. "There's a great center there," she explains, "where they work on issues related to female circumcision." ■

*Susan Cassidy is assistant editor of the Harvard Medical Alumni Bulletin.*



**CHANGE FROM WITHIN:** Somali refugee women in the Hartisheik camp in Ethiopia display posters about female circumcision as part of an awareness campaign aimed at eradicating the practice.

PHOTO: UNHCR/W. STONE

**Harvard Medical Alumni Association**  
25 Shattuck Street  
Boston, Massachusetts 02115  
Change Service Requested



**ABOVE:** In Greenland, neurophysiologist S. Allen Counter works with Inuit hunters, whose hearing begins to deteriorate as soon as they start hunting with guns at the age of ten.

**FRONT COVER:** Ophthalmologist Geoff Tabin summits Alaska's Mount McKinley, whose Athabascan name, Denali, has been adopted in mountaineering circles.

**Non-Profit Organization**  
U.S. Postage PAID  
Permit No. 52420  
Boston, MA